MAINTENANCE MANAGEMENT OF
COMMUNICATIONS-ELECTRONICS

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

This Air Force instruction (AFI) implements Air Force Policy Directive (AFPD) 21-1, *Air and Space Maintenance*. It establishes the Maintenance Management System and provides the directive guidance for Air Force activities that perform maintenance on Communications-Electronics (C-E) systems, equipment or circuits. It applies to all organizations and personnel that maintain C-E systems, equipment and circuits regardless of Air Force Specialty Code (AFSC) (to include Air Force Reserve Command [AFRC] and Department of Defense [DOD] civilian C-E organizations). This publication applies to the Air National Guard (ANG). In this document, the term "C-E maintenance" is defined as any action taken to restore C-E equipment to operational status, to perform preventive maintenance inspections (PMI) on C-E equipment, or to install or remove C-E equipment. The intent of this instruction is to ensure only qualified personnel perform maintenance to avoid unnecessary risks to personnel and prevent damage to C-E systems. Send recommended changes or comments to Headquarters Air Force Communications Agency (HQ AFCA/EASD), 203 West Losey Street, Room 1100, Scott AFB IL 62225-5222, through appropriate channels, using AF IMT 847, **Recommendation for Change of Publication**, with an information copy to HQ AFCA/EVPM, 203 West Losey Street, Room 2100, Scott AFB IL 62225-5222, and Headquarters United States Air Force (HQ USAF/ILC), 1030 Air Force Pentagon, Washington DC 20330-1030. **Chapter 9** requires collecting and maintaining information protected by the Privacy Act of 1974 authorized by 10 U.S.C. 8013. System of records notice F021 AFSPC A, Cable Affairs Personnel/Agency Records, applies. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with Air Force Manual (AFMAN) 37-123, *Management of Records* (will become AFMAN 33-363), and disposed of in accordance with Air Force Web-RIMS Records Disposition Sched-

ule (RDS) located at **https://webrims.amc.af.mil/rds/index.cfm**. See **Attachment 1** for a glossary of references and supporting information.

(ANG) This supplement expands on the guidance contained in AFI 21-116, *Maintenance Management of Communications-Electronics*, 19 April 05 and Incorporating Change 1, 7 December 2006. It applies to all Air National Guard (ANG) organizations that manage or perform organizational- or intermediate-level maintenance on communications-electronics (C-E) systems, equipment, and circuits to include field operating agencies. ANG Engineering Installation (EI) gaining command is Air Combat Command (ACC) and therefore will adhere to the AFI 21-116 Air Combat Command Supplement.

SUMMARY OF CHANGES

This interim change implements new communications-electronics maintenance guidelines. This change revises and/or eliminates the requirement to complete redundant maintenance practices. It prescribes certification requirements for Air Traffic Control and Landing Systems (ATCALS) and provides guidance for personnel evaluations. A bar (|) indicates a revision from the previous edition.

Chapter 1

MAINTENANCE MANAGEMENT POLICY

1.1. Scope. This instruction prescribes basic communications-electronics (C-E) maintenance guidance and procedures in use throughout the Air Force, excluding Air Logistics Centers (ALC) depot operations and C-E maintenance technicians assigned to airborne weapon systems. C-E maintenance technicians assigned to airborne weapon systems (i.e., airborne warning and control systems, unmanned aerial vehicles, etc.) shall refer to AFI 21-101, *Aerospace Equipment Maintenance Management*, for maintenance policy. This instruction covers all Air Force organizations and does not dictate structure by policy or procedures. Personnel who function in the dual capacity of instructor-maintainer, maintainer-operator or operator-maintainer will comply with this instruction and Chief of Maintenance (COM) directives when performing maintenance. In this document, the term "C-E maintenance" is defined as any action taken to restore C-E equipment to operational status, to perform preventive maintenance inspections (PMI) on C-E equipment, or to install or remove C-E equipment. The intent of this instruction is to ensure only qualified personnel perform maintenance to avoid unnecessary risks to personnel and prevent damage to C-E equipment. In this document, the term "C-E equipment" refers to all communications systems and equipment including but not limited to ground-based radio and wireless systems including infrared, radar, meteorological and navigational radiation aids used for aircraft control and landing; radiating aids for fire control; imagery, radio and television broadcast systems, video processing equipment and intrusion detection systems, satellite, microwave and telemetry equipment; mission critical computer hardware, telecommunications switching equipment, cable and antenna systems; cryptographic equipment and communications consoles; and electronic counter-measures and related radiation, re-radiation, and electronic devices.

1.1. (ANG) ANG Units are subject to this supplement while inactive, but will adhere to the gaining Major Command (MAJCOM) directive when activated. ANG units must be aware of gaining MAJCOM requirements and be prepared to implement any additional requirements upon activation.

1.2. Equipment Readiness. Equipment readiness is the maintenance mission. The maintenance function ensures assigned equipment is safe, serviceable and properly configured to meet mission needs. Maintenance actions include, but are not limited to, inspection, repair, overhaul, modification, preservation, refurbishment, testing and analyzing condition and performance. All levels of supervision must place emphasis on safety, training, quality, and timeliness in the performance of maintenance. Quality maintenance depends on the integrity and skills of the technician. This concept must be fostered by each supervisor and technician and will not be degraded. Shortcuts or incomplete maintenance actions are prohibited. When possible, maintenance is accomplished on a preplanned, scheduled basis. This planning provides the most effective and efficient use of people, funds, facilities, and equipment, reduces unscheduled maintenance, and allows for progressive actions toward maintaining and returning equipment to safe operating condition. Conducting a bench check of components and proper control of repair cycle assets throughout the maintenance cycle are also critical elements of the equipment maintenance program.

1.2.1. Maintenance Objective. The primary objective of maintenance is to ensure continued operational availability of systems and equipment used to support the Air Force mission. A key factor in achieving this objective is maintenance discipline. Maintenance discipline involves integrity in all aspects of the maintenance process. It is the responsibility of all personnel to comply with all written

guidance to ensure required repairs, inspections, and documentation are completed in a safe, timely and effective manner. Managers must establish a climate that promotes maintenance discipline.

1.2.2. Depth of Maintenance. Technology is constantly changing and traditional maintenance concepts must be adapted to the new environment. Managers must understand these traditional philosophies and endeavor to adjust their application to the current environment. The depth and breadth of these programs will vary considerably across the maintenance complex. Significantly more attention is demanded by older, more maintenance intensive systems than by newer equipment sustained under the Line Replaceable Unit (LRU) replacement concept.

1.2.3. Readiness Expectations. Unrealistically high readiness requirements may cause deferment of essential maintenance or training. Failure to recognize and support valid requirements may cause maintenance backlogs or mission failure. Managers must ensure every action is taken to make systems available for required maintenance actions and ensure maintenance is completed to meet mission requirements.

1.3. Maintenance Capability.

1.3.1. Maintenance capability is a unit's ability to maintain its assigned systems and equipment in proper condition and configuration. Managers must recognize the extent of their maintenance capability when planning to meet mission requirements. Overextending maintenance capabilities for long periods of time can result in reduced maintenance quality and ultimately cause mission failure. Managers will:

1.3.1.1. Plan and schedule maintenance to ensure personnel are productively employed throughout the work shift.

1.3.1.2. Distribute personnel with appropriate skill levels throughout the maintenance activity to provide the best mission support, supervision, and training.

1.3.1.3. Request and justify enough resources to support a continuous workload. Request temporary help to perform emergency workloads. Where resources are not available or cannot be made available, request reductions in mission requirements.

1.3.1.4. Encourage personnel to identify system or equipment parts and components that may be economically repaired at unit level, and where repair is not authorized, seek that authorization. Managers must balance the economic feasibility and possible cost savings of suggested local repair actions against mission requirements and additional workloads. Refer to paragraph **5.21.** for repair code change request guidance.

1.4. Communications and Transportation. Effective maintenance requires efficient communications and transportation. Transmit maintenance information and requests for assistance to staff functions and work centers so priorities can be assigned and follow-up action accomplished. Telephone, intercom, data, radio, or other communications device will be on hand at each site, facility or building where systems and equipment are operated or maintained. Suitable vehicles are required to transport personnel and material. Radios must be available to expedite personnel, equipment, materiel, and logistics data throughout the maintenance complex. A communication system will be selected with the capability to effectively support the maintenance communication requirements including mobility and host base interoperability according to AFI 33-202, Volume 1, *Network and Computer Security*.

1.5. Maintenance Staffing and Utilization.

1.5.1. Select the best-qualified personnel to fill staff and supervisory positions. Refrain from placing retrainees in staff positions until their skill level is commensurate with their grade.

1.5.2. Consider the availability of qualified technicians and redundant systems to attain a 100 percent availability to support mission requirements. Adjust staff and work center duty hours to meet mission requirements. Set up work schedules to meet mission requirements while not exceeding maximum duty periods; occasional peak workloads may require extended work shifts. When actual work hours consistently exceed applicable manpower standards, the commander and COM reassess the requirement(s) that made the overtime necessary. COMs or supervisors may waive these provisions during emergencies or advanced defense readiness conditions, including exercises, if necessary for mission accomplishment. The following guidance applies:

1.5.2.1. Duty time begins when personnel report for duty and ends when all maintenance actions are completed, deferred or turned over to another individual or crew. When personnel are dispatched to remote duty locations, travel time is duty time.

1.5.2.2. During normal operations, maintenance personnel will be scheduled for duty based on a 40-hour workweek. The following criteria governs maintenance personnel duty time limitations, except for on-call duty status:

1.5.2.2.1. Do not schedule personnel for more than 12 hours of continuous duty time. Provide a rest period after each shift. Time spent in exercise/contingency deployment processing lines and in-transit counts toward the total duty day and may impact time available to perform maintenance. For personnel dispatched to remote duty locations, this time may be extended to 16 hours including travel time. Personnel who remain overnight at the remote duty location will be allowed a minimum of 8 hours rest. Consider external factors such as weather and road conditions when extending duty time.

1.5.2.2.2. The period for combined maintenance and nonmaintenance (e.g., charge of quarters) duty should not exceed 12 hours. Personnel who perform maintenance duty and are then assigned to nonmaintenance duties may exceed the 12 continuous hour duty period, provided sleeping is permitted while performing the nonmaintenance duty.

1.5.3. Standby is the time technicians are scheduled to respond to outages beyond normal duty time and are required to remain in the work area. Personnel on standby coordinate meal and comfort breaks with the Maintenance Operations Center (MOC) or the appropriate operations function.

1.5.4. On-call is the time technicians are scheduled to respond to outages but are not required to remain in the work area. Normally, this occurs on weekends and after normal duty hours.

1.6. Maintenance Training. Training is the essential element ensuring systems are ready, operable and sustainable. Only trained technicians have the knowledge, skills and confidence to sustain operation of these systems during stressed situations. Properly structured and effectively presented training is the key to providing a technically qualified and proficient maintenance work force capable of ensuring readiness and sustained, reliable mission systems.

1.7. Categories of Maintenance Organizations. Categories of maintenance organizations are established to identify and scale maintenance management requirements based on unit characteristics such as organizational structure and number of authorized maintenance personnel. Typically, larger units require

more comprehensive and in-depth maintenance management programs. In contrast, smaller units may not "earn" maintenance staff authorizations to perform the maintenance management functions, so the smaller units routinely consolidate programs with multiple work centers, rely on a parent unit, or integrate with unit-level programs to effectively perform all prescribed maintenance management requirements.

1.7.1. Major commands (MAJCOM) will specify the category of maintenance organization for their units taking into consideration several factors such as the unit mission, organizational structure, number of authorized maintenance personnel, geographical location, and the category descriptions. See **Chapter 3** for the category descriptions and additional guidance.

1.8. Engineering and Technical Services (ETS). The Air Force uses two main methodologies, Air Force Engineering and Technical Services (AFETS) and Contract Engineering Technical Services (CETS) to provide technical assistance to field units. These technical services are designed to fill gaps created by emerging technology or to ensure continued operational availability of mission critical systems. Refer to AFI 21-110, *Engineering and Technical Services Management and Control*, for specifics on the ETS program.

1.8.1. AFETS is the primary source of ETS support in the Air Force. AFETS positions satisfy long-term ETS requirements for on-site field engineering support and specialized technical training. They help units and MAJCOM functional managers in resolving complex system problems by troubleshooting and repairing critical maintenance problems. AFETS also serve as the unit technical liaison and work with MAJCOM functional managers, depot technicians, engineers and item managers, and equipment manufacturers to resolve equipment problems. AFETS will certify tasks according to AFI 36-2201, Volume 3, *Air Force Training Program On the Job Training Administration*, in USAF personnel training records when training is provided to the go/no go level.

1.8.2. CETS is available on a selective basis to provide technical knowledge and assistance on specialized systems or equipment. Plan and program personnel training to satisfy technical requirements at the earliest possible time to decrease the need for CETS assistance. Typically, CETS assistance is provided during fielding of new technologies to bridge the gap until an independent Air Force capability is developed. CETS assistance is normally terminated within 12 months after gaining self-sufficiency.

1.9. Communications Standardization and Evaluation Program (CSEP).

1.9.1. CSEP (formerly Maintenance Standardization and Evaluation Program) is the systematic, continuous self-evaluation program for C-E maintenance. CSEP consists of personnel, technical, managerial and special evaluations. An effective CSEP is essential to successful C-E maintenance and requires the full commitment of all maintenance complex resources including the most competent technicians and the production work centers' full participation. The program's primary objectives are to give the COM an accurate assessment of the maintenance activity's capabilities and to provide supervisors an objective method to identify and correct discrepancies, and facilitate management actions to correct underlying causes to prevent discrepancies from reoccurring. A highly effective CSEP program will act as a force multiplier by ensuring acceptable quality levels are maintained across the organization. The COM must fully support the program to ensure these objectives are met.

1.9.2. This instruction establishes the minimum requirements for the CSEP. The COM determines the depth of the program; that is, the number, kind and frequency of evaluations. Technology is rapidly changing and the COM must adapt the CSEP to ensure the program is achieving the desired

goals. More often than not new systems will require significantly less focus on technical issues. However, these systems typically are delivered using nonorganic Air Force logistics systems. In these cases, it may be prudent to concentrate the CSEP process on the managerial actions necessary to sustain the mission. Technical evaluations may shift to inventories and configuration, personnel evaluations may focus more on support processes, or managerial evaluations may need to encompass contractor interfaces or nonstandard supply procedures.

1.9.3. Some essential elements and responsibilities of the CSEP are as follows:

1.9.3.1. Task Identification and Coverage: Work center supervisors identify tasks performed in the work center and ensure sufficient numbers of individuals are qualified on each task to provide complete and continuous task coverage (e.g., enough qualified technicians are available for duty [on-duty, on-call or standby] to cover all required work center tasks at any given time). Supervisors must plan for probable absences such as leave, Temporary Duty (TDY) or illness when determining the number of personnel to qualify on a given task.

1.9.3.2. Training: Supervisors continually evaluate the capabilities of assigned personnel, and then plan, schedule, and complete required training.

1.9.3.3. Evaluation: Quality Assurance (QA) evaluates personnel to assess the adequacy of training programs and technician proficiency. QA also performs periodic evaluations to determine the overall capabilities of the maintenance activity, assess the adequacy of technical data, evaluate maintenance actions, and ensure satisfactory equipment operation. Evaluations can include management practices, facilities and systems.

1.9.3.4. Analysis: QA analyzes the results of evaluations to identify trends and the basic causes for deficiencies.

1.9.3.5. Compliance with the CSEP is required for individuals task certified/qualified to maintain C-E equipment (e.g., personnel evaluations). Compliance with CSEP is required for work centers or functions responsible for mission capability (MICAP), maintenance data collection (MDC) reportable or mission critical systems and equipment (e.g., personnel, technical and managerial evaluations).

1.10. Management Actions on Evaluation and Audit Reports. QA evaluations, operational test and evaluation (OT&E), audits and other reports are valuable management tools used to identify specific defects and their causes. Supervisors ensure responsible individuals are involved in correcting problems and the underlying causes to prevent problems from reoccurring. Commanders and maintenance managers stay involved throughout the correction phase to ensure resolution of the discrepancies' underlying causes.

1.11. Modification Management. The Air Force establishes policies and procedures for accomplishment of modifications to in-service systems in AFI 63-1101, *Modification Management*. The modification process is used to correct deficiencies and improve reliability, maintainability and maintenance capability.

1.12. Maintenance Information Systems (MIS). MIS refers to the automated maintenance information systems including Core Automated Maintenance System (CAMS), Integrated Maintenance Data System (IMDS), Reliability and Maintainability Information System (REMIS), G081 (CAMS for Mobility),

Telephone Management System (TMS), and Air Force Knowledge Services (AFKS) formerly known as Enterprise Data Warehouse (EDW). The term IMDS replaces CAMS throughout this document; however, IMDS and CAMS remain as interchangeable terms. MIS provide maintenance supervisors at all levels with products to evaluate the organizational effectiveness and to aid in decision making. Deploying units must ensure that any and all appropriate hardware (i.e., computers, servers, etc.) are available at the deployed locations to ensure connectivity. The Directorate of Maintenance (HQ USAF/ILM) has central authority for policy and guidance covering all MIS according to applicable Air Force 33-series publications. According to the HQ USAF/IL Information Systems Strategic Architecture Plan, two of HQ USAF/IL's strategic goals are to provide integrated, trusted data and to eliminate or consolidate information systems. In support of these goals, HQ USAF/ILM is focusing MIS modernization efforts towards eventually fielding a single, integrated MIS functional component of the Expeditionary Combat Support System. To facilitate this drive to a single system, MAJCOMs and HQ USAF/ILM must control the proliferation of unit- or MAJCOM-unique MISs. This is accomplished using the Portfolio Management process.

1.12.1. IMDS is the production oriented, base-level automated maintenance management system designed to give managers visibility and control of resources at unit level. Maintenance personnel use IMDS to document equipment outages, schedule maintenance actions, document maintenance actions, document maintenance training and requisition supplies. IMDS can assist in determining operational readiness and is used to manage personnel and training requirements. Refer to Technical Order (TO) 00-20 series publications for maintenance documentation procedures. IMDS operation is the responsibility of the host database manager; however, other functions usually manage individual IMDS subsystems. Submit software and hardware changes according to the format in AFI 33-103, *Requirements Development and Processing*.

1.12.2. Applicability of MIS. IMDS is the approved Air Force standard maintenance data collection system for C-E systems and is mandatory for use. HQ USAF/ILC is the approval authority for waivers. C-E units will submit waiver requests to HQ AFCA/EVPM through their respective MAJCOMs. All personnel, regardless of AFSC, maintaining C-E equipment must comply with the following minimum requirements:

1.12.2.1. For equipment identified as MICAP or MDC reportable in the CAMS/REMIS Standard Reporting Designator (SRD) table, ensure appropriate equipment status, maintenance and supply data is entered into the appropriate data collection systems, and ensure equipment is maintained in TO or technical manual configuration. Use appropriate IMDS historical programs to document compliance with this requirement.

1.12.2.2. Ensure preventive maintenance schedules are developed and implemented for MDC reportable equipment with technical data mandating a preventive maintenance program. Preventive maintenance schedules are entered into IMDS to track and report completion, deviation, or rescheduling actions.

1.12.2.3. When IMDS is unavailable, units will use manual documentation procedures according to AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*, and Air Force Computer Systems Manual (AFCSM) 21-556, Volume 2, *Core Automated Maintenance System (CAMS)--Introduction to CAMS Software User Manual*. The data will be updated in IMDS when the system becomes available. Manual procedures can include documentation on paper copies of IMDS screens and Air Force Technical Order (AFTO) Form 349, **Maintenance Data Collection Record**.

1.12.3. The IMDS Job Data Documentation (JDD) Subsystem provides information about jobs performed by maintenance activities. In addition to information on actions taken, IMDS provides data about man-hours expended on each job; why each repair was required (how malfunction); what each repair encompassed (action taken); what item was repaired (Work Unit Code (WUC) to lowest level possible); when the malfunction was discovered; and who did the work. Use IMDS to report maintenance performed by organizations other than the local unit.

1.12.4. The use of the IMDS Training Management Subsystem to document training is mandatory for all C-E maintenance technicians. Refer to AFI 36-2201, Volume 3, for training documentation procedures.

1.12.5. MIS Data Classification. Data contained, entered, and retrieved in MIS is classified as "Sensitive/FOUO." Safeguards are in place to ensure control of this "Sensitive/FOUO" data with access through "military only" systems. Use is limited to authorized personnel who have been granted access through a controlled process. Each MIS has additional protection with unique, individually granted, need-to-know USERID/Password assurances. It is vital, especially during contingency operations, to capture maintenance data at every location to provide in-depth current/after action analysis of Air Force, MAJCOM, and unit efforts for deployments and contingencies.

1.13. Contract Maintenance.

1.13.1. This section identifies the basic responsibilities for managing Most Efficient Organization (MEO) or contract maintenance. Additional guidance is in AFI 63-124, *Performance-Based Service Contracts (PBSC)*.

1.13.2. Accomplish contract maintenance surveillance program duties according to procurement guidelines and command directives. When requested by the procurement office, the COM provides Quality Assurance Evaluators (QAE). QAE responsibilities are listed in AFI 63-124. Surveillance programs may vary depending on the scope of the contract and directions of the procurement office.

1.13.3. Only contracting officers are authorized to enter into or change a contract, Performance Work Statement (PWS) or Statement of Work (SOW). Air Force maintenance personnel do not give any directions or instructions to contractors or take any other action that could form the basis for a contractual claim. Direct problems with contract performance, contract changes, or interpretation to the responsible contracting officer, administrative contracting officer or QAE for resolution.

1.13.4. Contractual assistance may be used to satisfy a wide variety of requirements ranging from minor one-time repairs to operation and maintenance of complete systems. When maintenance management responsibilities are required of a contractor, they must be specifically identified in the PWS. As a minimum, PWSs shall have:

1.13.4.1. Contractor Maintenance Data Collection: Enter systems and component failure according to TO 00-20-2, *Maintenance Documentation;* material consumption according to TO 00-20-3, *Maintenance Processing of Reparable Property and Repair Cycle Asset Control System*; and Time Compliance Technical Order (TCTO) reporting requirements according to TO 00-5-15, *Air Force Time Compliance Technical Order Process,* in PWSs. Cite appropriate data items and include collecting TCTO and reparable processing data in contracts. Contract instructions call out the time and place to turn in data. Specify if the contractor provides complete source documents and forms or automated products.

1.13.4.2. System restoral priorities.

1.13.4.3. System restoral response times.

1.13.4.4. Procedures to maintain configuration control.

1.13.5. Managers will base PWS requirements on existing maintenance policy. The intent and philosophy of organic maintenance processes must be carefully considered and included when appropriate. Contract maintenance is not automatically exempt from standard logistics processes. For example, the requirement to document maintenance in Air Force approved MIS must be included in the PWS.

1.13.6. Consider contract maintenance on a planned and selective basis; however, wartime capability may not be compromised by excessive use of this resource. Check with appropriate MAJCOM managers to ensure local contract efforts do not erode command wartime capabilities.

1.14. War and Mobilization Plans Support. Managers have a continuing responsibility to set up and maintain the capability to support USAF combat missions. Detailed maintenance planning is needed to provide this capability. The COM will be familiar with AFMAN 10-401, Volume 1, *Operation Plan and Concept Plan Development and Implementation*, when preparing maintenance plans to support combat missions.

1.15. Programmed Mobility Procedures. "Programmed" refers to Unit Type Code (UTC) and Designed Operational Capability (DOC) statement tasking. Managers ensure maintenance activities are capable of meeting their programmed mobility requirements. Under the mobility concept, managers at all levels will be familiar with mobility requirements and the role of each subordinate activity. Planning, preparation and an understanding of roles and responsibilities are essential elements of mobility preparedness. Work with the Unit Deployment Manager, or similar activity, to keep informed of mobility requirements.

1.16. Agreements. There are several types of agreements detailed in AFI 25-201, *Support Agreement Procedures*. DD Form 1144, **Support Agreement**, documents the support services a supplier provides a receiver and the reimbursement the receiver will pay to the supplier for the identified levels of support. Host-Tenant Support Agreements (HTSA), Memorandums of Understanding (MOU) and Memorandums of Agreement (MOA) are used in lieu of the DD Form 1144 when it is necessary to document financial and support arrangements with US nongovernmental activities, with nonmilitary agencies or individuals, or before publishing a Base Support Plan. Functional areas also use MOAs or MOUs to document mutually agreed upon statements of fact, intentions, procedures, and policies for future actions.

1.17. Publications. MAJCOMs may supplement this AFI or publish a separate instruction according to AFI 33-360, Volume 1, *Air Force Content Management Program--Publications*. Units must tailor procedures to the unique aspects of their own maintenance operation and publish directives (e.g., instructions, supplements and operating instructions) for areas where more detailed guidance or specific procedures will ensure a smooth and efficient operation. Adhere to the following procedures:

1.17.1. Do not publish unit instructions or operating instructions (OI) to change or supplement TOs. Use the procedures outlined in AFI 21-303, *Technical Orders*, and TO 00-5-1, *AF Technical Order System*.

1.17.2. Coordinate directives with all appropriate unit agencies.

1.17.3. Resolve conflicts between publications and determine the applicability of departmental publications to the AFRC and ANG according to AFI 33-360, Volume 1. Conflicts between procedural technical publications and weapon system specific technical publications will be resolved in favor of the weapon system specific technical publication.

1.17.4. Operating Instructions (OI). Instructions pertaining to maintenance are published as group, squadron, or branch OIs. When crossing group lines, OIs must be coordinated with the affected commanders and published as wing OIs. OIs are not published to change Air Force instructions, Air Force policy or TOs.

1.17.5. Maintenance Operating Instructions (MOI). MOIs pertain to all personnel required to perform maintenance routines and are published by the COM. Guidance that applies to multiple work centers within the unit is published as a unit, base, or other standard publication. Maintenance activities under the functional control of the COM may initiate or request MOIs. MOIs are not published to change or supplement TOs and must take existing MOAs and MOUs into consideration. The publications and forms management requirements outlined in AFI 33-360, Volume 1, and AFI 33-360, Volume 2, *Content Management Program—Information Management Tool (IMT),* apply.

1.17.6. Technical Orders (TO). Use of prescribed technical data to maintain C-E equipment is mandatory. Operate and maintain Air Force systems, equipment, subsystems and support equipment according to applicable TOs. Basic policy regarding TO use is expanded in AFI 21-303, TO 00-5-1; TO 00-5-15; and TO 00-5-17, *Users Manual-USAF Computer Program Identification Numbering (CPIN) System*. The Enhanced Technical Information Management System will replace Joint Computer-aided Acquisition and Logistic Support and Automated Technical Order Management System functionality. TO management resources are available at **http://pdsm.wpafb.af.mil/TOPRAC/ to-syste.htm**.

    1.17.6.1. Supervisors will:

        1.17.6.1.1. Strictly enforce adherence to and compliance with TOs and supplements.

        1.17.6.1.2. Establish procedures for shipping TOs and supplements to support mobility requirements.

        1.17.6.1.3. Ensure availability of required TOs and supplements in work centers.

    1.17.6.2. All personnel will recommend improvements or corrections for TO deficiencies according to TO 00-5-1. Continually assess the currency, adequacy, availability and condition of the required TOs and supplements.

    1.17.6.3. The Air Force is modernizing the Air Force TO program using the Technical Order Concept of Operations (TO CONOPS) as a foundation. The goal of the modernization effort is to provide user friendly, technically accurate and up-to-date digital technical data at the point of use that is acquired, sustained, distributed and available in digital format from a single point of access for all technical data users. TO users will eventually access and view digital technical data using an Electronic Tool (E-Tool). An E-Tool is a desktop computer, laptop, or hand held device that automatically updates TOs, provides automated change requests (similar to AFTO IMT 22, **Technical Manual Change Recommendation and Reply**), and integrates with other MISs. Currently, digital technical data is accessible at website **http://pdsm.wpafb.af.mil/TOPRAC/ to-syste.htm**.

1.17.7. Commercial Manuals. The proliferation of commercial-off-the-shelf (COTS) equipment has driven an increase in the use of commercial manuals. All Air Force personnel must follow guidance for the use of commercial manuals according to TO 00-5-1. Managers must review this guidance to ensure it adequately addresses the maintenance complex's needs. Managers must consider whether to use the commercial manual as is or to create their own guidance. Some items to consider are: personnel and equipment safety, deployment procedures, alignment accuracy, parts and schematic breakouts, etc. Managers will work with MAJCOMs and lead commands to ensure commercial manuals provide adequate guidance to the maintenance technician.

1.17.8. QA will review all OIs to ensure the instructions are technically accurate, complete and consistent with Air Force and MAJCOM policy. OIs will be reviewed annually.

1.18. Tool Management. The objectives of the tool management program are to prevent and eliminate foreign object damage (FOD) to flight line equipment and to reduce replacement costs through effective control and accountability of assets. Tool management applies to all sections supporting C-E maintenance as defined in paragraph **1.1.**

1.18.1. General Guidelines. The COM will publish local operating instructions on the following areas, as a minimum:

1.18.1.1. Design active and UTC/mobility Composite Tool Kits (CTK) to provide a quick inventory and accountability of tools. For C-E purposes, CTKs are defined as all government purchased tools utilized to perform C-E maintenance as defined in paragraph **1.1.**

1.18.1.2. Each tool, equipment item, or consumable contained in a CTK will have an assigned location identified either by inlay cuts in the shape of the item, shadowed layout, label, or silhouette. No more than one item is stored in a cutout, shadow, or silhouette except for tools issued in sets (i.e., drill bits, Allen wrenches, etc.). Exception: utility CTKs (i.e., green tool bags, briefcase kits, etc.) will not have assigned/marked locations. Include guidance on tracking which tools are checked out and who has them.

1.18.1.3. Develop guidance to mark all tools and CTKs.

1.18.1.4. Develop a master inventory list (MIL) for each CTK. Maintain a copy of the MIL in the CTK at all times for inventory purposes.

1.18.1.5. Develop guidance to replace lost, broken, or unserviceable tools.

1.18.1.6. Personal tools will not be used.

1.18.1.7. Develop guidance to manage work center issued tools (i.e., mini-flashlights, multi-purpose hand tools, etc.).

1.18.1.8. Visually inventory work center issued utility CTKs (i.e., green tool bags, briefcase kits, etc.) prior to departing the work center and prior to departing the work site.

1.18.1.9. Perform a visual inventory of all CTKs when issued for use, at the completion of job or tasks, and when returned to the tool storage facility.

1.18.1.10. Account for all tools and active CTKs at the beginning and end of each shift. Document shift inventories. Sealed UTC/mobility CTKs will be inventoried when opened or a minimum of quarterly.

1.18.1.11. At least annually or when the CTK monitor changes, conduct a comprehensive inventory of all tools and CTKs. The purpose of this inventory is to perform an extensive inspection of all tools and equipment to include condition, identification markings, and accuracy of the MIL. Inspect tools for serviceability according to TO 32-1-101, *Use and Care of Hand Tools and Measuring Tools*.

1.18.1.12. Mark UTC/mobility toolboxes according to AFI 10-403, *Deployment Planning and Execution*.

1.18.1.13. Units using an automated system for tool control and tracking (i.e., bar code, scanners, etc.) will use the Tool Accountability System (TAS). This requirement does not apply to common office automation software used to create inventory lists.

1.19. Supply Requisitioning. Managers ensure the supply priority requisitioning system is not abused. Justification of priority requisitions will adhere to the standards published in AFMAN 23-110, *USAF Supply Manual*.

1.20. Self-Help Projects. All communications systems requirements, regardless of size or complexity, will have an AF IMT 3215, **IT/NSS Requirements Document**, or equivalent approved by the appropriate authority. Frequently, programmed projects are not sufficiently complex to warrant a dedicated Engineering and Installation (EI) team effort. In these cases, it may be expedient for the maintenance activity to install, remove or relocate the equipment on a self-help basis. The base Communications and Information Systems Officer (CSO) can request self-help implementation of communications systems projects. The COM, in conjunction with the project manager (PM), makes the final determination on the ability of the maintenance complex to complete a self-help project. ***NOTE:*** **Attachment 2** explains requirements processing and EI project related documentation. Use AFMQCC 200-3, *Communications-Electronics (C-E) Project Review,* to ensure all work, logistics support and documentation requirements are met.

1.21. Consolidating Functions. Consolidate functions and programs (i.e., tool control, supply management, etc.) within the maintenance activity consistent with mission, size, location and resources. Centrally locate the COM staff functions if possible.

1.22. Maintenance Management Metrics. Leaders, supervisors and technicians must have accurate and reliable information to make decisions. Primary concerns of maintenance managers are how well the unit is meeting mission requirements, how to improve equipment performance, identifying emerging support problems, and projecting future trends. Maintenance management metrics—sometimes called quality performance measures or indicators—are a crucial form of information used by maintenance leaders to improve the performance of maintenance organizations, equipment and people when compared with established goals and standards. Metrics often take the form of "Operational Availability" or "Status of Personnel Training" slides, presenting a gauge of an organization's effectiveness and efficiency. Properly used, metrics are roadmaps that help determine where you've been, where you're going, and how (or if) you're going to get there.

1.22.1. The overarching objective of Air Force maintenance is to maintain air and space equipment in a safe, serviceable and ready condition to meet mission needs. Maintenance management metrics serve this overarching objective and shall be established or maintained by Headquarters Air Force, MAJCOMs, wings and/or squadrons to evaluate and improve equipment condition, personnel skills

and long-term fleet health. Metrics shall be used at all levels of command to drive improved performance and adhere to well-established guidelines.

1.22.1.1. Metrics must be accurate and useful for decision-making.

1.22.1.2. Metrics must be consistent and clearly linked to goals/standards.

1.22.1.3. Metrics must be clearly understood and communicated.

1.22.1.4. Metrics must be based on a measurable, well-defined process.

1.22.2. Analysis is crucial to improving organizational performance and is the key component of the metrics management process. Commanders and maintenance managers must properly evaluate maintenance metrics and rely upon the maintenance analysis section for unbiased information. Analysis sections shall draw information from various MISs for data. AFKS, G081, IMDS, REMIS, Standard Base Supply System (SBSS), and HQ USAF/IL-approved command-unique analysis tools are the primary data sources. Maintenance managers use metrics to focus resources and personnel to improve maintenance processes. Managers must also clearly understand and communicate the crucial linkage between goals, standards and metrics. The Air Force sets goals and standards for organizations, personnel and weapons systems that facilitate evaluation, comparisons and improvements. These standards are published separately by senior leadership and should be clearly understood at all levels of command. Leaders at every level must also support analysis and review metrics to properly drive improved performance. Maintenance analysts manage and track this process, but maintenance metrics, and the resulting improvements they drive, are inherently a leadership responsibility.

1.22.3. Maintenance leaders must review maintenance production and maintenance health constantly and be knowledgeable about maintenance indicators that highlight trends before they become problems. Systems and equipment performance standards (derived from the lead commands) are located on the HQ AFCA C-E Maintenance Arena website at **https://private.afca.af.mil/c-e_maint**. Reference AFI 10-602, *Determining Mission Capability and Supportability Requirements*, AFPD 21-1, and TO 00-20-2, Appendix L, for examples of metrics and formulas.

Chapter 2

ASSIGNED RESPONSIBILITIES

2.1. General. The following paragraphs provide a summary of the objectives, organizational and functional relationships, and responsibilities that form the foundation for the C-E maintenance management system.

2.2. Directorate of Communications Operations (HQ USAF/ILC). HQ USAF/ILC develops and publishes C-E maintenance management policy and coordinates policy with other military services, MAJCOMs and other government agencies as applicable. In addition, HQ USAF/ILC will:

2.2.1. Manage C-E maintenance career fields. C-E maintenance career field information is available at **http://il-u.hq.af.mil/ilm/ilmm/cemaint/**.

2.2.2. Establish maintenance training via Career Field Education and Training Plans (CFETP), formal courses and Career Development Courses (CDC).

2.2.3. Chair the C-E Maintenance and Training Advisory Group (MATAG) and C-E Maintenance Chiefs Advisory Board (CEMCAB).

2.3. Headquarters Air Force Communications Agency (HQ AFCA). HQ AFCA is designated as the USAF executive agent to develop policy and guidance in specific maintenance management and related areas. HQ AFCA will:

2.3.1. Develop C-E maintenance management policy and guidance for HQ USAF/ILC.

2.3.2. Review waiver requests to this instruction and recommend appropriate actions.

2.3.3. Advocate for C-E manpower standards development and specialty utilization.

2.3.4. Assess C-E equipment as directed or requested.

2.3.5. Manage the Air Force Maintenance Quality Control Checksheet (AFMQCC) program according to **Attachment 3**.

2.3.6. Manage the Air Force Communications-Electronics Maintenance Instructions (AFCEMI) program according to **Attachment 4**.

2.3.7. Represent the C-E maintenance community as a member of the following:

2.3.7.1. Air Force Centralized Technical Order Management (CTOM) Group.

2.3.7.2. Air Force Metrology and Calibration (AFMETCAL) Advisory Group.

2.3.7.3. Maintenance Information Systems Integrated Process Teams (IPT).

2.3.7.4. Air Force Modification Policy Work Group (AFMPWG).

2.3.7.5. Integrated Maintenance Data System/Reliability and Maintainability Information System (IMDS/REMIS) Functional Review Board.

2.3.7.6. IMDS/REMIS Configuration Control Board.

2.3.7.7. Maintenance and Training Advisory Group (MATAG).

2.3.7.8. C-E Maintenance Chiefs Advisory Board (CEMCAB).

2.3.7.9. Maintenance Training Technology Working Group (MTTWG).

2.3.7.10. Functional Area Product Improvement Working Groups (PIWG).

2.3.7.11. Maintenance Information Technology Working Group (MITWG).

2.3.8. Serve as the Air Staff delegated chair for the C-E Maintenance Documentation Work Group.

2.3.9. Participate in writing and updating Methods and Procedures TOs.

2.3.10. Manage the Low-Density Adjusted Stock Level program for Communications-Electronics according to AFMAN 23-110.

2.4. MAJCOM Headquarters. MAJCOMs implement the following guidance for their activities that maintain C-E equipment. *NOTE:* For this instruction, the term MAJCOM also applies to Field Operating Agencies (FOA) and Direct Reporting Units (DRU). Regardless of size and type of organizational structure or maintenance activity, the functions and duties outlined in this instruction are the minimum mandatory requirements necessary to ensure effective, quality maintenance is performed. MAJCOMS will:

2.4. (ANG) ANG Functional Area Managers (FAMs) are responsible for implementing Air Force policy, establishing policy where necessary, and providing guidance to ANG activities that maintain C-E equipment.

2.4.1. Designate categories of maintenance organizations for assigned units.

2.4.1. **(ANG)** Categories of maintenance organizations for ANG units are defined in **Attachment 12** and **Attachment 17 (Added)**, as supplemented.

2.4.2. Forward validated waiver requests to HQ AFCA/EVPM.

2.4.3. Concentrate management efforts on the unique needs within the command.

2.4.4. Develop the minimum procedures necessary to accomplish the mission without generating unnecessary workloads. Managers at all levels refine and improve these processes to minimize administration, documentation and reporting workload.

2.4.5. Establish command maintenance management programs and provide necessary guidance and assistance.

2.4.6. Serve as command focal point to implement Air Force guidance and directives concerning systems modifications, Programmed and Mobile Depot Maintenance (MDM), TO improvements, Source, Maintenance, and Recoverability Code Change Requests, deficiency reports, product improvement reports, AFMQCC, AFCEMIs, corrosion control, C-E maintenance management directives, and TO 00-series publications.

2.4.6. **(ANG)** ANG FAMs will act as the primary point of contact for C-E maintenance management policy and guidance. Unless otherwise noted, all references to MAJCOM in the basic publication refer to ANG FAMs.

2.4.7. Manage the C-E portion of the ETS program in conjunction with the MAJCOM office of primary responsibility (OPR).

2.4.8. Provide guidance and support for C-E maintenance systems analysis, reliability, availability, and maintainability programs, and automated maintenance information systems. At a minimum, MAJCOMs will:

2.4.8.1. Review equipment status, mission status, evaluations, and analysis reports to identify and analyze systems or equipment deficiency trends.

2.4.8.2. Perform trend analysis and special studies on fielded systems and equipment to identify adverse equipment performance.

2.4.8.3. Provide systems and equipment performance data to assigned units to measure mission readiness and assist in trend analysis.

2.4.8.4. Provide feedback to units on Equipment Status Reporting (ESR) and JDD discrepancies.

2.4.9. When designated, perform duties as lead command or system affiliate for C-E systems as specified in AFI 10-901, *Lead Operating Command—Communications and Information Systems Management*. Lead commands validate adjusted stock level changes submitted by units and other MAJCOMs and forward to HQ AFCA/EVPS. Units forward submissions to their respective MAJCOM prior to sending to the lead command.

2.4.10. Develop and implement life cycle logistics support plans (LSP) for MAJCOM acquired COTS systems and equipment according to **Chapter 10** of this instruction.

2.4.11. Specify command management responsibilities for maintenance management of C-E equipment, systems and facilities.

2.4.12. Establish procedures for and manage "L" coded Standard Reporting Designators as prescribed in AFI 23-106, *Assignment and Use of Standard Reporting Designators*.

2.4.13. Assist subordinate units to correct deficiencies they cannot resolve.

2.4.14. Review TO improvement reports, product improvement and deficiency reports, modification proposals, AFCEMIs, MQCCs, repair code change requests, and waiver requests submitted by subordinate units. Initiate appropriate documents when product improvement trends are identified.

2.4.15. Manage Special Maintenance Teams (SMT). Review SMT special duty assignment applications to ensure applicants have appropriate qualifications. Coordinate reviews with the command SMT OPR and recommend approval or disapproval. Reference **Attachment 5** for SMT management procedures.

2.4.16. Perform specified duties related to determining manpower requirements, reviewing manpower change requests, and monitoring personnel assignment use and training.

2.4.16. **(ANG)** ANG FAMs perform skills management functions to include manpower, organizational/authorization change requests, and formal/just-in-time training for all 2EXXX AFSCs or equivalent civilian job classifications.

2.4.17. Monitor training needs. Review evaluation, status, and analysis reports for indicators of possible training deficiency trends. Validate annual training requirements and special training requests for specific AFSCs and maintenance functions. Recommend development of training packages.

2.4.18. Manage the command Centralized Repair Activity (CRA) program according to **Attachment 6**, and:

2.4.18.1. Provide MAJCOM CRA management policies and procedures.

2.4.18.2. Review requests to establish CRAs, manpower and organizational change requests, relocation requests, and validations to continue operation of CRAs.

2.4.18.3. Develop economic analyses for establishing new CRAs or justification to continue an existing CRA. Determine funding responsibilities for CRA operations. Negotiate cross command CRA support and funding agreements.

2.4.18.4. Provide guidance to conduct studies to establish and operate CRAs. Publish Maintenance Action Directives (MAD) to establish and operate CRAs. Request HQ USAF and Headquarters Air Force Materiel Command (HQ AFMC) approval, if needed.

2.4.18.5. Develop CRA material processing and supply support procedures, guidance, and assistance. Provide, as required, updated listing of assemblies, subassemblies, modules, and printed circuit cards supported by each CRA.

2.4.18.6. Submit request for reimbursement of HQ AFMC Source of Repair (SOR) workload, as required.

2.4.18.7. Ensure CRA support is considered during development of maintenance concepts for new equipment acquisition programs. Support responsibilities, including funding, are defined in the Product Support Management Plan (PSMP) or the Integrated Logistics Support Plan (ILSP) when CRA support is required for new equipment or systems.

2.4.19. As needed, perform staff visits to investigate suspected problem areas or to provide a more detailed look at management and work center areas. The goal is to help resolve specific problems, provide training, exchange information, and obtain an understanding of special requirements resulting from the unit's mission or location.

2.4.19. **(ANG)** ANG units may request SAVs by contacting the appropriate ANG FAM. Unit requested SAVs will not be conducted within a 180 day period before any Air Traffic Control evaluation or within a 90 day period before Inspector General Inspections.

2.4.20. Provide EI QA guidance to assigned EI units.

2.4.21. Ensure antenna systems are managed according to **Attachment 7**.

2.5. Unit Commander. The unit commander will:

2.5.1. Ensure all personnel performing C-E maintenance (regardless of AFSC) follow the maintenance management requirements in **Attachment 8**.

2.5.2. Designate the COM and Maintenance Superintendent in writing.

2.5.3. Require strict adherence to technical data and all other written management procedures.

2.5.4. Enforce sound maintenance, supply discipline, and financial management practices.

2.5.5. Ensure life cycle logistics support for unit acquired COTS systems and equipment according to **Chapter 10** of this instruction.

2.5.6. Designate, in writing, technicians authorized to perform Air Traffic Control and Landing Systems (ATCALS) facility certifications according to criteria established in paragraph **11.9.**

2.5.7. Identify structures that must be climbed for mission accomplishment and personnel required to maintain climbing proficiency (see **Attachment 9**).

2.5.8. Develop communication plans according to mission requirements and requirements identified in paragraph **1.4.**

2.5.9. Review and evaluate maintenance and training effectiveness with the COM, maintenance superintendent, MOC, QA, and maintenance supervisors quarterly using the deficiency analysis summary, maintenance training summary, and other relevant management products.

2.6. Chief of Maintenance. The COM plans, organizes, staffs, directs and controls the maintenance effort and is responsible to the commander for accomplishing the maintenance mission. The number and complexity of maintenance responsibilities dictate that some are handled by staff functions. In those cases, the staff functions act through, or in the name of, the COM. The COM must make personal contact and frequent visits throughout the maintenance activity. Effective maintenance management results from the efficient use of resources to meet mission requirements within specified time frames. The COM will use the following procedures to achieve the highest level of maintenance effectiveness. As a minimum, the COM will:

2.6.1. Ensure effective and timely use of the technical expertise and services available from CRAs and SMTs. Submit requests for assistance from these activities according to command directives.

2.6.2. Implement management concepts and procedures for Functionally Supported Maintenance Activities (FSMA). Delineate COM, maintenance staff, and FSMA management support duties.

2.6.3. Manage civil service employees according to Office of Personnel Management and Air Force directives.

2.6.4. Ensure an orientation program is established for newly assigned personnel. The orientation program should augment rather than duplicate the unit orientation program. The program should provide a description of the mission(s); description and tour of maintenance staff and production work centers; description of individual duties and responsibilities; local policies (i.e., duty hours, leave, recall, safety, security, etc.); and other areas, as appropriate. See **Attachment 10** for a sample orientation plan. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https://private.afca.af.mil/c-e_maint**.

2.6.5. Utilize ETS personnel in accordance with AFI 21-110.

2.6.6. Temporarily realign duties to ensure efficient use of assigned manpower. Responsibility for task accomplishment remains within the specific function as defined in MAJCOM standardized organizational structures.

2.6.7. Ensure QA participates in the acceptance and operational testing of new installations and systems.

2.6.7. **(ANG)** If no Quality Assurance (QA) work center is assigned (e.g. Category III or IV units), then the maintaining work center will perform acceptance and operational testing for new systems/ equipment. For contracted maintenance sites, the performing work center will perform required operational acceptance and a qualified government Quality Assurance Evaluator (QAE) will perform acceptance inspections for new systems/equipment and major modifications.

2.6.8. Appoint a unit Test, Measurement, and Diagnostic Equipment (TMDE) coordinator, in writing, to perform responsibilities in **Attachment 11**. The COM may delegate unit TMDE coordinator responsibilities to the production work centers. If delegated, ensure the unit responsibilities in **Attachment 11** are performed.

2.6.9. Establish close working relationships with base support activities. Periodic visits by the COM to supporting activities such as the Precision Measurement Equipment Laboratory (PMEL), chief of supply, contracting, and Base Civil Engineer (BCE) are recommended. Focus these visits on how the communications maintenance activity and other supporting activities can jointly work toward improved support of the unit's mission.

2.6.10. Ensure procedures are established for security, control and accountability of tools. Refer to paragraph **1.18.** for tool management guidelines.

2.6.11. Ensure a depot level maintenance submission program is established for assigned equipment according to TO 00-25-108, *Communications-Electronics (C-E) Depot Support*.

2.6.12. Ensure procedures for the repair/service of warranted items are established according to AFMAN 23-110, TO 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System,* and other applicable directives.

2.6.13. Ensure installation project packages are reviewed for feasibility of installation and continued validity of the requirements. This includes providing tools, test equipment, and support to work teams as required by the installation package or when needed to preclude work stoppages.

2.6.14. Ensure TCTO modification kits are provided to installation teams for compliance during installation of new systems.

2.6.15. Publish a maintenance plan. The COM will determine the content and frequency based on the organization's needs. Maintenance plans should be developed in a matter that facilitates ease of prep-aration and use. **Attachment 10** includes a list of suggested topics and a sample maintenance plan outline. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https://private.afca.af.mil/ce_maint**.

2.6.16. Publish policy, guidance and procedures for the maintenance complex.

   2.6.16.1. Develop and approve an MOI to delineate maintenance responsibilities. The COM approves QA-validated MOIs for publication and use by signing the title page.

   2.6.16.2. Approve and publish validated local work cards (LWC) prior to use. The COM approves QA-validated LWCs, AFTO Form 26D, **Inspection Work Document**, for publication and use by signing the LWC title page.

2.6.17. Ensure life cycle logistics support plans are developed and implemented for unit acquired COTS systems and equipment according to **Chapter 10** of this instruction.

2.6.18. Ensure effective training programs are established in work centers, Materiel Control, MOC, QA and other assigned maintenance staff functions. With exception of Materiel Control, the tasks performed in the staff functions do not lead to the award of an AFSC skill level, so all personnel, including supervisors, must receive training on the duties of their assigned staff function. Identify training requirements and document their completion according to applicable training instructions, CFETPs, Air Force Job Qualification Standards (AFJQS), and local Job Qualification Standards (JQS).

2.6.19. Ensure effective safety and radiation protection practices are established according to Air Force Occupational Safety and Health Standard (AFOSHSTD) 48-series, AFOSHSTD 91-series, and TO 31Z-10-4, *Electromagnetic Radiation Hazards,* Appendix A.

2.6.20. Initiate corrective action to resolve management, system, and equipment deficiencies.

2.6.21. Include maintenance requirements for mission support in plans, programs and support agreements.

2.6.22. Develop procedures to execute maintenance tasks listed in war and mobilization plans, disaster preparedness plans and programming documents. Develop procedures to execute local deployment requirements to include pre- and postdeployment requirements. Ensure personnel are trained to accomplish these tasks.

2.6.23. Identify factors which limit (or can limit) the capability of the maintenance activity to meet its mission requirements to appropriate agencies.

2.6.24. Evaluate systems and equipment installations, complete customer questionnaires, and return them to the installation activity. Provide meaningful comments and specific examples when dissatisfied with the service provided.

2.6.25. Ensure prudent management, control, storage, and cost-effective use of government property under their jurisdiction according to AFI 23-111, *Management of Government Property in Possession of the Air Force.*

2.6.26. Act as approval authority for cannibalization requests. The COM may delegate cannibalization approval. ***NOTE:*** The CSO has approval authority for mission critical computer hardware.

2.6.27. Provide MAJCOM and Air Force with accurate visibility of equipment assets and training status in IMDS by ensuring equipment and mission status, maintenance documentation, and training data are current.

2.6.28. Ensure review of IMDS maintenance documentation is conducted and errors are corrected.

2.6.29. Coordinate actions that impact airfield operations with the local Airfield Operations Flight (AOF) Commander or equivalent level of authority.

2.6.30. Act as approving authority of requests for use of on-line, operational systems to test or verify serviceability of parts, such as supply point assets.

2.6.31. Review the status of maintenance training programs monthly.

2.6.32. Review and evaluate maintenance performance and training effectiveness with the commander, maintenance superintendent, MOC, QA, and maintenance supervisors quarterly using the deficiency analysis summary, maintenance training summary, and other relevant management products.

2.6.33. Review CSEP personnel evaluation reports that document unsatisfactory task results.

2.6.34. Ensure antenna system are managed according to **Attachment 7**.

2.7. Aerospace Expeditionary Forces (AEF) and Mobility Response Actions. In-garrison maintenance functions are key to ensuring sustained operational readiness in the deployed environment. Units with strong in-garrison maintenance practices can expect high success when deployed. Regardless of unit structure, the COM has overall responsibility for ensuring technicians adhere to maintenance manage-

ment principles. Maintenance managers at all levels are responsible for ensuring personnel comply with established guidance.

2.7.1. The COM will take the following predeployment actions when the unit receives a mission tasking order: *NOTE:* Refer to **Chapter 8** for deployed maintenance management procedures.

2.7.1.1. Determine the support that can be provided by the parent unit, deploying unit, and host unit for the contingency operation or exercise prior to deployment.

2.7.1.2. Ensure communications planning requirements are accomplished prior to deployments. This function must:

2.7.1.2.1. Plan and coordinate maintenance tasks and support needed to fulfill mobility requirements.

2.7.1.2.2. Consolidate maintenance inputs for host-tenant, inter-service and inter-agency agreements, and for letters of agreement used in support of deployed forces.

2.7.1.2.3. Coordinate with installation spectrum managers to ensure radio frequency (RF) emitters meet spectrum requirements (i.e., equipment is spectrum certified, has host nation support, frequency authorization, etc.). Refer to AFI 33-118, *Radio Frequency (RF) Spectrum Management*, for additional guidance.

2.7.1.3. Coordinate sharing of skills and resources across the unit.

2.8. Maintenance Superintendents. Maintenance superintendents provide an experienced managerial and technical perspective to the maintenance activity by advising and assisting the COM. The superintendent performs as an advisor, teacher and confidant to maintenance personnel. A maintenance activity with an enlisted COM is not authorized a maintenance superintendent. Exception: MAJCOMs may authorize a maintenance superintendent when warranted. Maintenance Superintendents will:

2.8.1. Advise and assist the COM, staff, and work center supervisors in managing and administering maintenance programs. Maintenance superintendents must promote a free exchange of ideas and encourage supervisors to seek help when needed. To ensure effectiveness, maintenance superintendents do not normally supervise personnel or work centers.

2.8.2. Perform as the COM when required.

2.8.3. Familiarize themselves with and make frequent visits to all maintenance functions.

2.8.4. Control personnel assignment within the maintenance activity and advise the COM on manning levels. Ensure each work center receives equitable manpower in terms of numbers and skills.

2.8.5. Provide advice concerning morale and welfare to maintenance personnel.

2.8.6. Promote a close working relationship between staff functions and work center supervisors.

2.9. Maintenance Supervisors and Branch Chiefs. Maintenance supervisors, also called branch chiefs, perform intermediate level supervision when the size or number of work centers preclude direct supervision by the COM. The maintenance supervisor performs as an extension of the COM by supervising several work centers. To ensure an effective supervisory span of control, some units may need a number of maintenance supervisors. Maintenance supervisors are directly responsible to the COM and will:

2.9.1. Frequently visit each work center and systems operating location.

2.9.2. Know the capabilities and limitations of their work centers.

2.9.3. Ensure work center supervisors have a thorough knowledge of their duties and comply with applicable directives and TOs.

2.9.4. Ensure compliance with maintenance schedules.

2.9.5. Emphasize quality and safety.

2.9.6. Ensure upgrade training and maintenance OJT training programs are established and effectively managed.

2.9.7. Ensure observed or reported training deficiencies are corrected.

2.9.8. Ensure work centers assist each other when additional skills or resources are required.

2.9.9. Ensure maintenance data and analysis products are used to solve problems and improve the maintenance effort.

2.9.10. Maintain a close liaison with the maintenance staff.

2.9.11. Inform the COM of problems that are beyond the capability to solve at the branch level.

Chapter 3

CATEGORIES OF MAINTENANCE ORGANIZATIONS

3.1. Introduction. MAJCOMs will specify the category of maintenance organization for their units taking into consideration several factors such as the unit mission, organizational structure, number of authorized maintenance personnel, geographical location, and the category descriptions. The category descriptions listed in this instruction will not be used as the sole determinants in categorization, but rather as guidelines. The intent is to provide the most efficient and effective management system for the unit's size, mission, and complexity.

NOTE: When determining a unit's category of maintenance organization, do not include MEO or contract maintenance personnel unless maintenance staff support responsibilities are included in the contract.

3.2. Organization. This instruction does not dictate organizational structure. However, typical structures of categories of maintenance organizations are shown in **Figure 3.1.**, **Figure 3.2.** and **Figure 3.3.**. Refer to AFI 38-101, *Air Force Organization,* for further guidance.

3.3. Category Descriptions.

3.3.1. Category I (Large) Maintenance Organization. Units authorized 80 or more personnel for maintenance production work centers and FSMAs are considered Category I maintenance organizations. The functions, responsibilities and procedures for this type of organization are all those identified in this instruction. Refer to **Attachment 12**, **Table A12.1.** for Category I requirements from **Chapter 2** - **Chapter 5**. **Figure 3.1.** illustrates the typical Category I maintenance organization.

3.3.2. Category II (Medium) Maintenance Organization. Units authorized 25 - 79 personnel for maintenance production work centers and FSMAs are considered Category II maintenance organizations. The size and mission of this category permits an effective span of control enabling the COM to coordinate and direct the maintenance effort with either a separated maintenance staff or a consolidated maintenance staff (e.g., combined MOC and QA functions). Refer to **Attachment 12**, **Table A12.1.** for Category II requirements from **Chapter 2** - **Chapter 5**. **Figure 3.2.** illustrates the typical Category II maintenance organization.

3.3.2.1. The COM will determine the most effective structure (e.g., separated or consolidated maintenance staff) to adopt. A significant determining factor is the number of maintenance staff authorizations.

3.3.2.1.1. Organizations with separated maintenance staff functions will perform all duties identified in this instruction.

3.3.2.1.2. For organizations with a consolidated staff:

3.3.2.1.2.1. The COM will:

3.3.2.1.2.1.1. Perform duties according to paragraph **2.6.** and **Attachment 12**, **Table A12.1.**

3.3.2.1.2.1.2. Establish focal points across the organization to perform some of the maintenance staff responsibilities. The intent is to balance the workload between the consolidated staff and the production work centers. Publish an MOI and use appoint-

ment letters (when appropriate) to delineate and assign some or all of the following responsibilities:

       3.3.2.1.2.1.2.1. Vehicle management (see **Chapter 4**).

       3.3.2.1.2.1.2.2. IMDS focal point duties (see **Chapter 4**).

       3.3.2.1.2.1.2.3. Technical publications program (see **Chapter 5**).

       3.3.2.1.2.1.2.4. Corrosion prevention and control program (see **Chapter 5**).

       3.3.2.1.2.1.2.5. Logistics support program (see **Chapter 5**).

       3.3.2.1.2.1.2.6. Maintenance training management (see **Chapter 5**).

   3.3.2.1.2.2. The consolidated maintenance staff will:

     3.3.2.1.2.2.1. Perform MOC responsibilities (see **Chapter 4**) with the exception of COM-assigned focal point duties.

     3.3.2.1.2.2.2. Perform QA duties (see **Chapter 5**) with the exception of COM-assigned focal point duties.

     3.3.2.1.2.3. Work center personnel will perform work center responsibilities according to **Chapter 7** and **Attachment 12**, **Table A12.1.**

3.3.3. Category III (Small) Maintenance Organization. Units authorized 24 or fewer personnel for maintenance production work centers and FSMAs are considered Category III maintenance organizations.

   3.3.3.1. The size and mission of this category permits an effective span of control enabling the COM to coordinate and direct the maintenance effort with a smaller number of personnel performing maintenance staff functions. The COM can have first-hand knowledge of the competence of technicians and condition of systems and equipment; therefore, many of the control and monitoring programs required by larger units may not be required in this category. This knowledge allows the COM to make management decisions that enhance the unit's operations and tailor the use of personnel and equipment for more effective mission support.

   3.3.3.2. Based on their size, small units do not earn maintenance staff authorizations (i.e., MOC, QA, etc.) essential to implement and manage a comprehensive maintenance management program. In some cases, the maintenance function does not have a parent maintenance organization providing maintenance staff support. In other cases, the maintenance function is embedded in another organization such as an Operational Support, Special Tactics, or Rescue Squadron.

   3.3.3.3. In Category III maintenance organizations, the maintenance function will augment rather than duplicate the unit's management programs and procedures. Refer to **Attachment 12**, **Table A12.1.** for Category III requirements from **Chapter 2** - **Chapter 5**. **Figure 3.3.** illustrates a typical Category III maintenance organization. *NOTE:* Category III maintenance organizations are allowed more flexible maintenance management procedures; however, the units are not exempt from DOD, Air Force, MAJCOM, and local directives beyond the scope of this instruction (i.e., safety, environmental, training, supply, etc.).

   3.3.3.4. MAJCOMs will:

3.3.3.4.1. Develop and publish CSEP policy best suited for the assigned Category III organizations. Use the concepts and procedures in **Chapter 5** as a guide to develop CSEP policy; however, include the mandatory items listed in **Attachment 12**, **Table A12.1.**

3.3.3.5. COM will:

3.3.3.5.1. Perform duties according to paragraph **2.6.** and **Attachment 12**, **Table A12.1.**

3.3.3.5.2. Establish focal points to perform the minimum necessary maintenance staff duties and responsibilities. Publish an MOI and use appointment letters (when appropriate) to delineate and assign the following responsibilities:

3.3.3.5.2. **(ANG)** The COM may divide and delineate responsibilities as required by manpower constraints, but will use an MOI to specify paragraph numbers if duties from applicable chapters are distributed among multiple personnel. The MOI will include any additional responsibilities the COM will personally assume not already identified in paragraph **2.6.** and **Attachment 12**, **Table A12.1.**

3.3.3.5.2.1. IMDS focal point duties (see **Chapter 4**).

3.3.3.5.2.2. Technical publications program (see **Chapter 5**).

3.3.3.5.2.3. Process material and TO deficiencies (see **Chapter 5**).

3.3.3.5.2.4. Perform technical reviews of modification proposals and process valid proposals (see **Chapter 5**).

3.3.3.5.2.5. Corrosion prevention and control program (see **Chapter 5**).

3.3.3.5.2.6. Maintenance training management (see **Chapter 5**).

3.3.3.5.2.7. AEF and mobility response actions (see **Chapter 4** and **Chapter 5**).

3.3.3.5.2.8. **(Added-ANG)** Manage the electrostatic discharge (ESD) program (**Chapter 5**).

3.3.3.5.2.9. **(Added-ANG)** Manage the Unit vehicle program when assigned (**Chapter 4**).

3.3.3.5.2.10. **(Added-ANG)** MOC duties as defined by applicable paragraphs from **Table A12.1.** in the basic publication.

3.3.3.5.2.11. **(Added-ANG)** CSEP program manager (**Chapter 5**).

3.3.3.5.3. Review Not Reparable This Station (NRTS) actions to ensure appropriate action has been taken to repair the assets locally.

3.3.3.5.4. Be the approving authority for all cannibalization actions.

3.3.3.5.5. Establish written restoral criteria in coordination with user/operations personnel.

3.3.3.6. Work center personnel will:

3.3.3.6.1. Perform work center responsibilities according to **Chapter 7** and **Attachment 12**, **Table A12.1.**

3.3.3.6.2. Perform MOC responsibilities according to **Attachment 12**, **Table A12.1.** Do not duplicate responsibilities of COM-assigned focal points.

3.3.4. Category IV Functionally Supported Maintenance Activity (FSMA). FSMAs are not self-sufficient; they are managed by a maintenance supervisor and perform only those staff responsibilities, which, because of their nature, should be done locally. When maintenance staff personnel are assigned to a FSMA, they will augment rather than duplicate the COM staff. The remaining staff functions and responsibilities are done within the parent maintenance activity. The parent unit COM will establish policy and procedures on adhering to the guidance in this instruction. Refer to **Attachment 12**, **Table A12.1.** for Category IV requirements from **Chapter 2** -**Chapter 5**. **Figure 3.4.** illustrates a typical Category IV maintenance organization.

3.3.4.1. Units with FSMAs assigned will publish detailed guidance, either an MOI or MOA, to clearly define functional responsibilities for supported activities. As a minimum, the MOI or MOA will address MOC, training, TO management and CSEP evaluations.

3.3.4.2. Maintenance staff functions that can be effectively performed by the COM staff will not be performed at the FSMA.

3.3.4.3. At a minimum, the FSMA maintenance supervisors will:

3.3.4.3.1. Frequently visit each work center and systems operating location.

3.3.4.3.2. Know the capabilities and limitations of their work centers.

3.3.4.3.3. Ensure work center supervisors have a thorough knowledge of their duties and comply with applicable directives and TOs.

3.3.4.3.4. Ensure compliance with maintenance schedules.

3.3.4.3.5. Emphasize quality and safety.

3.3.4.3.6. Ensure upgrade training and maintenance OJT training programs are established and effectively managed.

3.3.4.3.7. Ensure observed or reported training deficiencies are corrected.

3.3.4.3.8. Ensure work centers assist each other when additional skills or resources are required.

3.3.4.3.9. Ensure maintenance data and analysis products are used to solve problems and improve the maintenance effort.

3.3.4.3.10. Maintain a close liaison with the maintenance staff.

3.3.4.3.11. Inform the COM of problems that are beyond the capability to solve at the FSMA.

Figure 3.1. Category I (Large) Maintenance Organization.
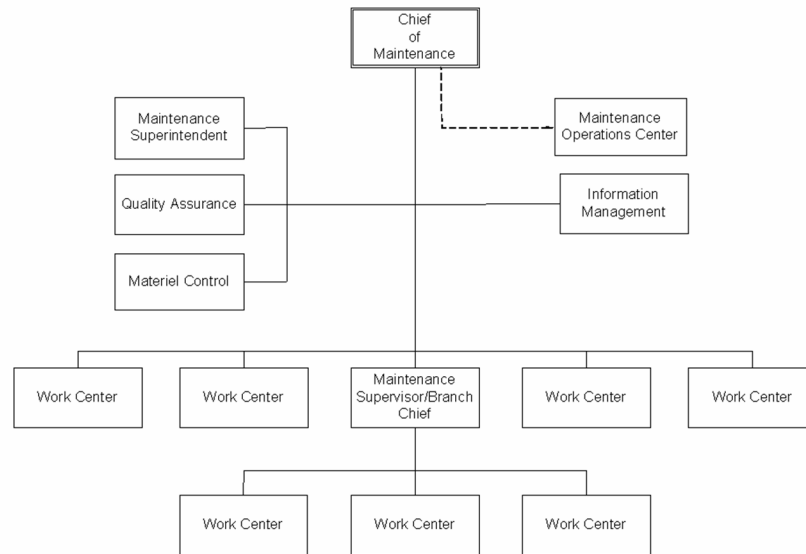
Figure 3.2. Category II (Medium) Maintenance Organization.
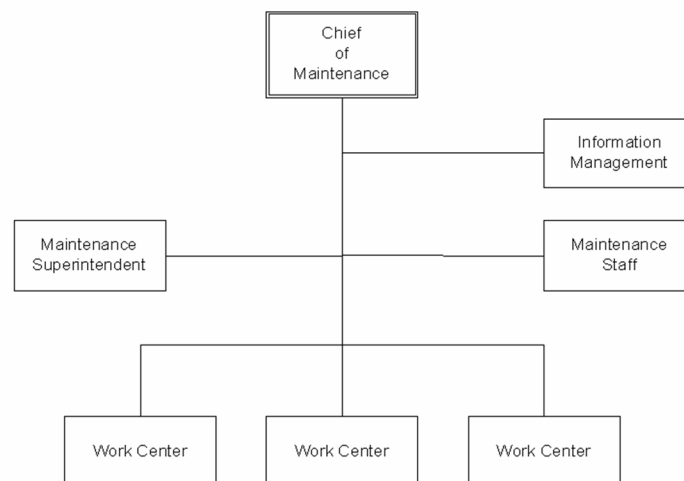
Figure 3.3. Category III (Small) Maintenance Organization.
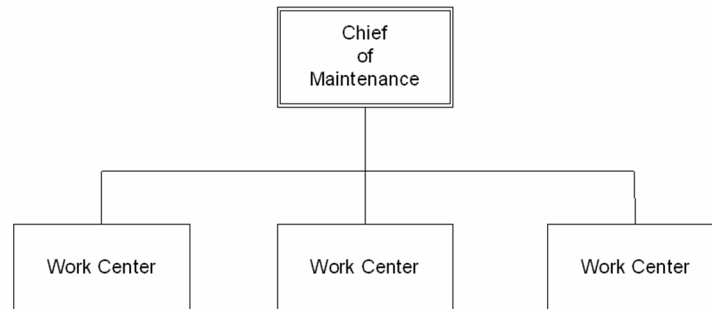
Figure 3.4. Category IV Functionally Supported Maintenance Activity (FSMA) Maintenance Organization.
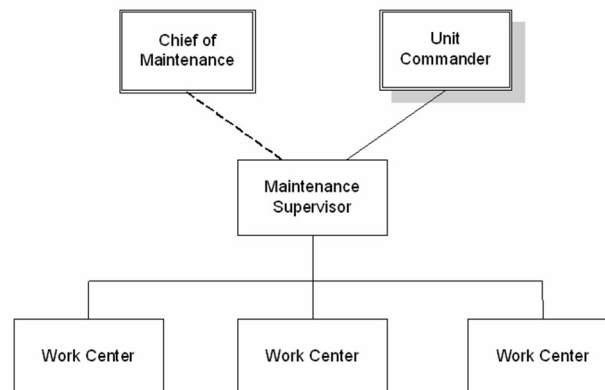
Chapter 4

MAINTENANCE OPERATIONS CENTER (MOC)

4.1. Introduction. The Maintenance Operations Center (MOC) functions in direct support of the unit's operational mission and is the management function which monitors, coordinates and controls the use of manpower and materiel in support of maintenance production. It is the focal point for the assembly, collation and assessment of significant logistics information and requirements. The terms "systems" and "equipment" are used interchangeably and must be understood as being dependent on the local mission. Management of this function requires a person with a broad technical and supervisory background. The MOC personnel must be aware of how maintenance problems affect the unit's mission and what efforts are necessary to resolve the problems. *NOTE:* Refer to **Chapter 8** for additional information on deployable communications systems.

4.2. Maintenance Operations Center (MOC) Supervisor Responsibilities. The MOC supervisor will:

4.2.1. Be thoroughly knowledgeable of MOC responsibilities and procedures.

4.2.2. Monitor and direct the maintenance production effort.

 4.2.2.1. Ensure support is scheduled, monitored, controlled, and coordinated for maintenance production; perform database management duties, as necessary; and plan and schedule the use of maintenance resources.

 4.2.2.2. Assemble, collate and assess significant maintenance information and requirements to enhance the maintenance production effort.

4.2.3. Ensure accomplishment of MOC responsibilities.

4.2.4. DELETED.

4.2.5. Ensure MOC personnel are trained on duties, responsibilities and procedures.

4.2.6. Establish an approximate tour length for personnel assigned to the MOC function. Tour lengths must consider the unit mission and the need for personnel to remain technically proficient in their duty AFSC.

4.2.7. Develop procedures to sustain MOC operations in the event of power failure, communications outages, etc.

4.2.8. Provide the COM and maintenance superintendent an initial orientation of MOC responsibilities and procedures.

4.3. Maintenance Operations Center (MOC) Personnel. MOC personnel must be:

4.3.1. Qualified on at least one of the communications systems maintained. *NOTE:* The COM may waive this requirement for short tour assignments and DOD civilian and contractor personnel.

4.3.2. Able to evaluate maintenance requirements and direct timely corrective actions with assistance from maintenance work centers.

4.3.3. Possess a 5-skill level or higher. Do not assign 3-skill level personnel except on a case-by-case basis.

4.3.4. **(Added-ANG)** Personnel detailed from production work centers may be assigned to the MOC for no more than 24 months. This does not apply to technicians hired specifically for MOC responsibilities.

4.4. Maintenance Operations Center (MOC) Training Programs. MOC training programs provide assigned personnel with a thorough understanding of MOC duties, responsibilities and procedures.

4.4.1. MOC personnel will accomplish AFJQS 2EXXX-201F, *Maintenance Control*, and other applicable AFJQSs (e.g., IMDS and Database Managers) training resources for task qualification and duty position training. *NOTE:* AFJQS 2EXXX-201EA will replace AFJQS2EXXX-201E, *Core Automated Maintenance System (CAMS/IMDS)*, and AFJQS 2EXXX-201EB, *Database Manager's Handbook.*

4.4.2. MOC training programs will provide:

4.4.2.1. An orientation briefing to promote an understanding of the unit's mission and the systems installed and maintained to accomplish that mission.

4.4.2.2. Visits to maintenance production work centers, staff offices, and supported operations functions, such as the air traffic control tower, network control center, and weather station.

4.4.2.3. An overview of the functions and capabilities of support organizations, such as PMEL and base supply.

4.4.2.4. A working knowledge of radio procedures and communications discipline.

4.4.2.5. The knowledge of contractor maintained systems and the procedures to call out the appropriate vendor.

4.5. Maintenance Operations Center (MOC) Responsibilities.

4.5.1. Control all maintenance actions that cause creation of an equipment status report. The COM may direct MOC to track non-ESR reportable equipment.

4.5.2. When directed, act as a consolidated contact point to receive trouble reports and complaints from supported customers. Consolidating some or all contact points is a local determination. In all cases, it is essential for customers and users to know how and whom to contact when they experience C-E systems' problems.

4.5.2.1. Consolidated contact points appear as a single telephone number to affected customers. Ensure adequate telephone lines are available to minimize customer delays in reaching the trouble reporting number.

4.5.2.2. If functioning as a consolidated contact point, the MOC must be able to transfer trouble calls and establish conference calls.

4.5.3. Establish an after duty hours contact point to perform MOC duties when a 24-hour MOC is not utilized. Provide detailed written procedures for the after duty hours function. Make this activity or individual available to the customers through the trouble reporting point telephone number, if established.

4.5.3.1. Ensure the unit commander approves the use of an activity or individual to perform after duty hours MOC duties, unless the activity or individual is already aligned under the COM.

4.5.3.2. Ensure MOC personnel accomplish the following tasks when transferring MOC responsibilities to a new shift for 24-hour MOCs or to the after duty MOC:

4.5.3.2.1. Update the status of all open jobs.

4.5.3.2.2. Brief the next shift for 24-hour operations or the after duty hours MOC activity on the status of all open jobs, scheduled actions, and situations that could affect the maintenance mission.

4.5.3.2.3. Review all open jobs for accuracy when responsibility is returned to the MOC.

4.5.3.2.4. Maintain a log of MOC actions. The log content will contain the minimum data necessary to accomplish system and equipment status reporting.

4.5.3.2.5. Have a current copy of all local procedures required to perform MOC duties.

4.5.4. Maintain status visibility. Automated status visibility programs are encouraged.

4.5.5. Document and report system or equipment status according to AFI 21-103 and command directives.

4.5.5.1. Enter and update ESR data as events occur.

4.5.5.2. Review IMDS management products (i.e., C-E Open Incident List, C-E Status Summary, etc.) for accuracy to ensure a usable product for analysis and management. Reference AFCSM 21-560, Volume 2, *Core Automated Maintenance System (CAMS), C-E Equipment Status and Inventory Reporting*, for IMDS management product descriptions and format options.

4.5.5.3. Correct ESR errors. *NOTE:* ESR corrections are limited to the previous 33-day time period.

4.5.5.4. Maintain a current inventory of all mission critical end items and reportable missions, to include COTS items, maintained by the unit. Use the IMDS C-E Equipment Inventory List, C-E Mission Correlation List, and other listings as appropriate to document the inventory.

4.5.6. Monitor the status of assigned maintenance vehicles, unless otherwise directed by the commander or COM.

4.5.6.1. Monitor the dispatch and operational status of vehicles assigned to the organization. Operational status will reflect vehicle type, serial number, where assigned, if radio equipped, condition (in or out of service), and remarks. Vehicle users report status changes to the MOC. Geographically Separated Units (GSU) may report vehicle status to the MOC.

4.5.6.2. Advise the MOC supervisor when vehicles do not adequately support maintenance production.

4.5.6.3. Maintain an off base dispatch status display or log showing the driver's or team chief's name, time out, and destination. GSUs may maintain their own dispatch status. The COM will coordinate with the base vehicle operations office to determine off-base work locations that do not require dispatch monitoring.

4.5.6.4. Establish procedures to control the use of vehicles shared by more than one work center or designated for priority requirements. If the unit vehicle control activity publishes appropriate guidance, then MOC procedures are not required.

4.5.7. Maintain the status of on-call technicians and dispatch them as required.

4.5.8. Direct and control authorized cannibalization actions according to TO 00-20-2.

4.5.8.1. Ensure a demand is placed on the supply system to verify the part is not available before resorting to a cannibalization action.

4.5.8.2. When cannibalization is the only option available, identify the end item to be cannibalized, and request approval to cannibalize from the COM or designated representative. *NOTE:* The CSO has approval authority for mission critical computer hardware.

4.5.8.3. Document cannibalization actions using appropriate IMDS screens.

4.5.8.4. Approved cannibalization actions are directed and controlled by the MOC and documented by the work center. Materiel Control uses AF Form 2414, **Verification Worksheet**, (or automated document) to document cannibalization actions related to MICAP incidents.

4.5.8.5. For approved cannibalization actions, the MOC initiates a new job control number (JCN), against the item to be cannibalized, and directs the cannibalization action.

4.5.8.6. When the removal action is done, the MOC annotates a comment/follow-up against the appropriate job and inputs an IMDS comment transaction. The MOC will defer the job for the cannibalized end item pending receipt of the replacement part.

4.5.9. Assign all Job Control Numbers (JCN). Blocks of JCNs may be assigned to work centers. Units using IMDS may use manual or automatic JCN assignments. If IMDS manual JCNs are used, contact the host database manager and obtain a block of JCNs for unit use. The construction, assignment, and use of JCNs are shown in TO 00-20-2.

4.5.9.1. The JCN serves as a unique identifier for each job. Once a JCN is assigned to a job, the same JCN is carried until the job is completed, regardless of whether control of the JCN changes between the MOC and the work center.

4.5.9.2. Blocks of local JCNs may be allocated to work centers for work that does not require control by the MOC. When a work center controlled maintenance action changes the system or equipment status, the JCN and control of the maintenance effort reverts to the MOC.

4.5.10. Verify supply requirements when Materiel Control personnel are not available. The MOC supervisor may require on-call Materiel Control support after normal duty hours.

4.5.11. Verify Urgency of Need Designator (UND) with Materiel Control.

4.5.12. Notify affected activities of changes in priorities, plans, and schedules.

4.5.13. Assist work centers in developing request for depot maintenance assistance according to TO 00-25-108.

4.5.14. Coordinate anticipated mission downtime with the appropriate mission customer or activity and the affected maintenance work center. Coordination may be delegated to the appropriate work center.

4.5.15. Use IMDS to initiate and control maintenance actions that change equipment status. Use locally generated means if IMDS is temporarily unavailable.

4.5.16. Prepare and maintain a master PMI schedule. Send the applicable PMI schedule, annotated with JCNs, to the work centers, or use IMDS auto scheduling.

4.5.17. Notify the performing work centers for scheduled TCTOs, time change items and other anticipated maintenance actions which require TO 00-20-series documentation.

4.5.18. Maintain a list of system and equipment identification numbers, local standard reporting designator, and local serial numbers, when necessary. Comply with IMDS requirements for the management and control of the inventory portion of the IMDS C-E Equipment Status and Inventory Reporting Subsystem.

4.5.19. Maintain the status of all active and deferred discrepancies. Reconcile deferred discrepancies, JCNs in Awaiting Parts (AWP) status, with Materiel Control. Enter required comments, such as requests for command assistance, into IMDS. Reconciliation information includes a review of the current status, acceptability of the Estimated Delivery Date (EDD) and verification of the Urgency Justification Code (UJC).

4.5.20. IMDS and REMIS serve as the record copy for both ESR and non-ESR systems. Units without IMDS retain a copy of the locally generated documentation.

4.5.21. Accomplish TCTO processing. Refer to **Attachment 13** for additional information.

4.5.22. Notify the COM when the customer is not satisfied with the corrective action or responsiveness.

4.5.23. MOC personnel (or Maintenance Data Systems Analyst if assigned) serve as the IMDS focal point for all IMDS database issues. The IMDS focal point will:

4.5.23.1. Comply with host database policies for background processing. Ensure all IMDS products needed by the unit are received on time and include the proper data.

4.5.23.2. Coordinate with the host database manager to ensure C-E CAMS/REMIS Reconciliation Program (NSF5B0) and Delete History are processed monthly. Ensure 5B0 errors are corrected and REMIS is updated prior to processing Delete History.

4.5.23.3. Coordinate with the host database manager to correct processing problems or suspected software problems including correction of REMIS errors to ensure its database accurately reflects the local IMDS database.

4.5.23.4. Coordinate with the host database manager when off-line/pseudo processing is required.

4.5.23.5. Notify work centers of scheduled IMDS system downtime and outages.

4.5.23.6. Use manual backup procedures according to AFI 21-103 and AFCSM 21-556, Volume 2.

4.5.23.7. Assign local work center codes and mnemonics according to TO 00-20-2.

4.5.23.8. Provide guidance to work center supervisors to ensure maintenance data accuracy, timeliness and correction of errors.

4.5.23.9. Coordinate with the IMDS host database manager to process IMDS TRIC Code: QBR (Maintenance Action Review Report). Distribute products to work center representatives for maintenance documentation review and error correction. *NOTE:* JDD corrections are limited to the previous 10-day time period.

4.5.23.10. Consolidate work center maintenance documentation errors to identify trends.

4.5.23.11. Meet with all work centers' MDC representatives monthly to review trends in maintenance documentation errors and establish corrective actions.

4.5.23.12. Perform C-E maintenance status and inventory reporting procedures according to AFI 21-103. *NOTE:* ESR corrections are limited to the previous 33-day time period.

4.5.23.13. Use IMDS management products to ensure accurate equipment inventories, maintenance data documentation, and ESR (i.e., C-E Equipment Inventory List, C-E Open Incident List, C-E Status Summary, etc.). Reference AFCSM 21-560, Volume 2, for IMDS management product descriptions and format options.

4.5.24. Ensure antenna systems are managed according to **Attachment 7**.

4.6. Control of Maintenance. The MOC controls and documents the status of all active jobs that change equipment status. Active jobs are defined as those jobs where work is in progress or scheduled to be done that day. Jobs will be considered active even though routine delays may cause breaks in the normal work schedule.

4.6.1. Follow the input formats in AFCSM 21-556, Volume 2, through 21-579, Volume 2, for IMDS and the reporting criteria of AFI 21-103 and/or command directives for processing ESR information.

4.6.2. The MOC controls all scheduled actions that cause a change in system or equipment status. For these actions, the MOC will:

4.6.2.1. Coordinate status changes with all concerned agencies. With COM concurrence, this coordination may be done by the tasked work center. Include coordination procedures in local directives. Coordination includes the start time and estimated time of return to operation (ETRO). Estimated time in commission (ETIC), as used in IMDS, is the same as ETRO.

4.6.2.2. Coordinate deferred PMIs with the maintenance work center and using activities to ensure inspections are completed as soon as possible after the cause for deferment is resolved.

4.6.2.3. Obtain new ETROs when the established ETRO cannot be met.

4.6.3. The MOC provides customers with directions on how to report deficiencies with communications-computer systems.

4.6.4. The MOC controls all unscheduled maintenance actions if the status of a mission or mission system is affected. The MOC will:

4.6.4.1. Report all problems to the appropriate maintenance work center or unit OPR.

4.6.4.2. Maintain a list of unit OPRs for contractor maintained or contractor operated communications systems.

4.6.4.3. Establish local procedures (i.e., trouble log, shift log, etc.) to document significant events and customer reported jobs that do not require an entry into IMDS.

4.6.4.4. Coordinate response/action on problems that affect equipment status with the customer and the appropriate work center or unit OPR capable of resolving the problem. The MOC will:

4.6.4.4.1. Obtain information required for IMDS or local documentation entries.

4.6.4.4.2. Obtain a preliminary ETRO. If corrective action cannot begin immediately due to higher priority maintenance or established restoration criteria, ensure the customer understands and is agreeable to the delay. If necessary, the COM will resolve any disagreement.

4.6.4.4.3. Request applicable OPRs notify the MOC when such problems are resolved, even if resolved by functions outside of the maintenance activity.

4.6.4.4.4. Follow up with the work center or unit OPR if the job is not completed by the established ETRO and advise the customer of the delay.

4.6.4.5. Ensure, after a job is assigned to a work center, the work center coordinates directly with other work centers to correct the problem. The MOC must update IMDS or the trouble log if primary responsibility to correct the problem is shifted from one work center to another.

4.6.5. The MOC inputs the maintenance event and status of jobs that change equipment status into IMDS. When real-time IMDS direct input is not possible, use the IMDS printout or a locally developed system to record required data until it can be entered into IMDS.

4.6.5.1. When IMDS direct input is not possible and a PMI requires ESR reporting, show completion on the preventive maintenance schedule.

4.6.5.2. When the PMI schedule is used for this purpose, show the start and stop times.

4.6.5.3. Document deviations to the schedule in enough detail to explain why the action could not be performed.

4.6.6. Note that control normally begins when a customer, user, or operator identifies a problem and the MOC assigns a JCN. In some cases, such as for critical command and control systems, the MOC may not learn of the problem until after operating or using personnel have notified the maintenance work center and restoral work has begun. Where the unit commander authorizes critical systems operators to notify the maintenance work center first and the MOC second, the MOC initiates control, reporting, and status-keeping procedures as soon as the malfunction is verified.

4.7. Administrative Telephone Service Outages. When the COM has telephone maintenance responsibility, customers with telephone outages normally contact the telephone test board (or Help Desk) directly. As an alternative, they may be connected to the telephone test board attendant through the MOC.

4.7.1. When a test board is installed and attended, test board attendants use AF IMT 2447, **Telephone Trouble Log**, or an equivalent automated capability to control maintenance actions.

4.7.2. When the test board is unattended, the MOC completes AF IMT 2447 or automated equivalent and passes it to the test board attendant the next duty day. If priority restoration is needed, the MOC directs the maintenance action.

4.7.3. When a test board is not installed, the MOC receives telephone service complaints, logs the trouble, and directs the maintenance action.

4.7.4. If telephone service is provided by contract and the MOC acts as a consolidated contact point for administrative telephone outages, the MOC will:

4.7.4.1. Transfer the call to the contractor trouble desk or provides pertinent information to the contractor. *NOTE:* If the contractor is not required to notify either the customer or the MOC

when service is restored, MOC may be directed to follow-up with the customer until service is restored.

4.7.4.2. Notify the contract QAE when excessive restoral delays occur or if the customer is not satisfied with corrective action.

4.8. Job Priorities. Job priorities ensure resources are allocated according to job importance and mission requirements and are related to established system, equipment, and circuit restoral criteria.

4.8.1. Use the circuit restoral priorities assigned by the Telecommunications Service Priority to establish restoral criteria for Defense Information System Agency (DISA) circuits and associated equipment. The priority for each DISA circuit appears on its corresponding Telecommunications Service Order (TSO). This ensures circuits and supporting systems and equipment are restored according to national communications objectives.

4.8.2. Note that this does not mean each system, piece of equipment, and circuit is listed in absolute priority order, but the criteria provides the MOC a means to determine their relative priority. The MOC uses the restoral criteria to assign priorities when an urgent need exists or when competition for resources occurs. Job priorities govern the sequence of work to be done and the distribution of tasks in and between work centers. Work centers assign job priorities to jobs under their control. When priorities are unclear, mission impacts are used to determine the priority.

4.9. Preplanned and Time Change Procedures. QA notifies the MOC when a preplanned or time change action is required. The MOC establishes a method to ensure advance notice is provided to Materiel Control so items are on hand prior to scheduled replacement dates.

4.10. Aerospace Expeditionary Forces (AEF) and Mobility Response Actions. The MOC will take the following predeployment actions when the unit receives a mission tasking order:

NOTE: Refer to **Chapter 8** for deployed maintenance management procedures.

4.10.1. Verify the status and availability of tasked equipment/UTCs and support equipment from the published mission or tasking order.

4.10.2. Assign predeployment inspection JCN(s) for tasked equipment/UTC(s).

4.10.3. Aggressively manage maintenance actions to ensure tasked equipment/UTCs are ready for deployment.

4.10.4. Print out PMI listings for the duration of the scheduled deployment and distribute them to the deploying UTCs.

4.10.5. Control or maintain a status of the movement of equipment to and from the deployment assembly area.

4.10.6. Display status of the deployment assembly area.

4.10.7. Develop procedures for recording ESR, MDC, and PMI completion data for entry into IMDS from the deployed location. These procedures may require remote access to IMDS or sending documentation via electronic means for entry by home station personnel.

4.10.8. Perform the following preparatory steps to ensure access to IMDS from the deployed location:

4.10.8.1. Contact applicable MAJCOM(s) or IMDS database manager for assistance.

4.10.8.2. Include IMDS requirements in communications planning documents.

4.10.8.3. Provide points of contact list to deploying MOC personnel to resolve connectivity and accessibility issues.

Chapter 5

QUALITY ASSURANCE (QA)

5.1. Introduction. Maintenance quality and equipment reliability is the responsibility of all personnel performing maintenance. Maintenance personnel are expected to install, configure, operate, inspect, maintain, repair, and remove C-E equipment in strict compliance with applicable technical data, safety directives and policy guidance. The combined efforts of QA personnel, maintenance leaders, and technicians are necessary to ensure high quality maintenance production and equipment reliability. Maintenance leaders are responsible for safety of equipment operation, training, and quality maintenance production. Exception: Due to the unique aspects of the EI mission, EI units are exempt from the QA requirements in this chapter. The parent MAJCOM will provide QA guidance to assigned EI units. *NOTE:* Refer to Chapter 8 for deployed maintenance management procedures.

5.2. Quality Assurance (QA). QA embodies a leadership philosophy that creates, throughout the maintenance activity, a working environment that inspires trust, teamwork, and a quest for continuous, measurable improvement. An inherent part of this philosophy is the requirement to assist work center, staff function supervisors, and the COM to identify and resolve maintenance and management problems. In order to foster this philosophy, QA must be more than just an inspection-oriented function. Evaluation and analysis of deficiencies and problems are key functions of QA. QA can significantly improve the quality of maintenance as well as the overall management posture within the maintenance activity by assisting staff and production supervisors to determine the root causes of problems and helping to devise corrective actions. QA is the maintenance activity's primary technical advisor. *NOTE:* Reference AFJQS 2EXXX-201G, *Maintenance Support*; in-resident training course E3AZR2E066 004, *Communications-Electronic (C-E) Maintenance Support Procedures*, or mobile training course E4AST2E066 011 to accomplish task qualification training.

    5.2.1. The QA staff evaluates the quality of maintenance done in the maintenance organization and performs necessary functions to manage the organization's CSEP. Quality of maintenance and management, equipment condition, training plan effectiveness and personnel proficiency are validated through the CSEP.

5.3. Quality Assurance (QA) Supervisor. The QA supervisor is responsible to the COM to ensure effective maintenance and management practices are used throughout the maintenance activity. The QA supervisor will:

    5.3.1. Be thoroughly knowledgeable of QA responsibilities and procedures.

    5.3.2. Ensure accomplishment of QA responsibilities.

    5.3.3. Ensure QA personnel are trained on duties, responsibilities and procedures.

    5.3.4. Establish an appropriate tour length for personnel assigned to the QA function. Consider the unit mission and the need for personnel to remain technically proficient in their duty AFSC. Actual tour length may vary for each individual.

    5.3.5. Provide the COM and maintenance superintendent an initial orientation of QA responsibilities and procedures.

5.4. Quality Assurance (QA) Personnel. The COM fills QA positions with highly qualified and motivated personnel. Individuals selected to fill these positions are to be qualified and well suited for evaluation, analysis, and support duties. Do not assign personnel with a primary AFSC at the 3-skill level to QA.

5.4.1. QA responsibilities go beyond performing evaluations. QA personnel must be able to provide assistance with technical and management guidance so staff functions and work centers can detect and correct problems in the early stages.

5.4.2. Personnel assigned to QA or appointed as work center QA Representatives (QAR) will be trained by experienced QA personnel on management procedures, evaluation methods, and how to find probable causes for identified problems. Use AFJQS 2EXXX-201G as a guide for training QARs.

5.5. Work Center Quality Assurance Representatives (QAR). The COM may appoint one or more work center QAR(s) to accomplish duties as directed. QARs must demonstrate a thorough knowledge of their assigned QA duties.

5.5.1. QARs will be trained according to paragraph **5.4.2.**

5.5.2. QARs may assist QA during managerial evaluations. However, to maintain the objectivity of the managerial evaluation, QA will perform the majority of technical evaluations.

5.5.3. **(Added-ANG)** Traditional guardsman QARs are highly encouraged and can supplement managerial evaluations outside their own work center for specific areas of management expertise. For example, a safety representative or a training NCO from one work center can evaluate a program from another. The experience and unique perspective brought by the traditional guardsman can enhance the CSEP program while expanding the responsibility and experience of the individual. To ensure integrity in the CSEP program, QARs are subject to the restrictions in subsequent paragraphs.

5.6. Quality Assurance Responsibilities. QA validates use of effective training programs, proven maintenance techniques, safety procedures, supply discipline, security procedures, and good housekeeping standards. QA should be involved in direct maintenance only to the extent needed to monitor maintenance and management quality. As a minimum, QA will:

5.6.1. Provide help, advice, and authoritative references to work center supervisors and the COM staff.

5.6.2. Establish and maintain a technical publications program.

5.6.3. Manage the CSEP.

5.6.4. Establish a deficiency analysis program and perform technical reviews.

5.6.5. Process material and TO deficiencies.

5.6.6. Serve as the focal point for the self-sufficiency program.

5.6.7. Review work center facility, system installation and equipment records management.

5.6.8. Perform technical reviews of modification proposals and process valid proposals according to applicable directives.

5.6.9. Serve as the focal point for the Corrosion Prevention and Control Program according to AFI 21-105, *Air and Space Equipment Structural Maintenance*.

5.6.10. Serve as focal point for the subject of electrostatic discharge (ESD)control, and conduct work area ESD Control surveys according to TO 00-25-234, *General Shop Practice Requirements for the Repair, Maintenance, and Test of Electrical Equipment*.

5.6.11. Perform hands-on maintenance, when directed by the COM.

5.6.12. Train QARs according to paragraph **5.4.2.** and spot check QAR performance.

5.6.13. Validate MOIs and assist in the development as needed.

5.6.14. Maintain proficiency on UTC-related training tasks.

5.7. Publication Requirements. Technical publications are essential for QA to function properly and to provide the maintenance activity with accurate information. Technical publications include TOs, commercial manuals, and specialized publications. Set up and maintain these publications according to AFPD 21-3, *Technical Orders*, AFI 21-303 and TO 00-5 series publications.

5.8. Technical Order (TO) Distribution and Control.

5.8.1. QA establishes a Technical Order Distribution Office (TODO) and ensures the adequacy and accuracy of TO files in the maintenance activity according to TO 00-5-1. QA establishes requirements for Computer Program Configuration Items according to TO 00-5-17. Give special attention to all electronically transmitted TCTOs and TOs due to the urgent nature of this type of change. *NOTE:* Reference AFI 21-303 and TO 00-5-1 for Lead TODO responsibilities.

5.8.2. QA ensures current method and procedures TOs, TCTOs, evaluation work cards, work unit code manuals, and other TOs are available to the entire maintenance activity. The primary consideration is availability of TOs, with minimum duplication. QA is not required to keep duplicate copies of technical publications maintained by another work center/agency. If a TO is not maintained in QA, verification may have to be performed by QA in the work center. TOs should not be removed from the primary work locations simply to accommodate the staff.

5.8.3. The COM may authorize FSMAs to set up a TODO.

5.9. Time Compliance Technical Order (TCTO) Processing. QA initiates TCTO processing actions according to **Attachment 13** and TO 00-5-15. QA reviews each incoming TCTO and advises the MOC of its applicability. Copies of each TCTO are distributed to the MOC, Materiel Control, and affected work centers as shown in **Figure A13.1.** and **Figure A13.2.**

5.10. Preplanned and Time Change Procedures. QA reviews all applicable -6 scheduled evaluation and maintenance requirements manuals and -6WC work cards to determine if preplanned and time change items are required. When requirements exist, QA provides the MOC the information needed to initiate suspense procedures.

5.11. Local Work Cards (LWC). Preventive Maintenance Inspection (PMI) requirements are normally shown in -6WC work card sets or -6 maintenance TOs. Some systems, especially minor electronic components, are bought "off-the-shelf" and do not have PMIs published in the TO system. In this event, fol-

low the manufacturer's recommended maintenance schedules and the guidance provided in **Table A8.1.**, **Table A8.2.**, and **Table A8.3.**

5.11.1. When PMIs are not published in the TO system, the COM determines if PMIs are needed. If needed, the COM decides whether to use available commercial manuals or to publish LWCs. Refer to TO 00-5-1 and TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*. Consider specifications for mean-time-between-failure, operational requirements and other checks.

5.11.2. LWCs cannot modify existing PMI routines.

5.11.3. QA validates LWCs and assists in the development as needed.

5.11.4. Use MAJCOM established LWC format. A prime consideration should be ease of use by work center technicians. TO 00-5-1 procedures for LWCs apply.

5.11.4. **(ANG)** Local work cards will be published on AFTO Form 26D, *Inspection Work Document*, or equivalent electronic forms.

5.12. Overview of Communications Standardization and Evaluation Program (CSEP).

5.12.1. CSEP provides the COM with key indicators to judge the maintenance activity's ability to meet mission requirements. QA performs personnel, technical, managerial and special evaluations to determine the quality of maintenance management, production, and procedures; technician competence; and training program effectiveness. QA will publish specific guidance describing procedures for evaluations, suspense control, report preparation and routing, initial report reply and follow-up procedures.

5.12.2. QA uses evaluation results to determine the effectiveness of maintenance and management practices. Management practices, systems and facilities must be evaluated periodically to identify and correct problems.

5.12.3. Deficiencies found during systems evaluations may show a need for personnel evaluations. This can provide insight into a technician's training progression as well as the scope of work center training programs. Consider the training goals established for the technician as well as training already completed.

5.12.4. QA performs evaluations during normal scheduled downtime if systems must be removed from operation. This requires close coordination between QA, MOC and work center supervisors.

5.12.5. Evaluation schedules are jointly developed by QA, work center supervisors, and MOC to ensure minimum disruption. QA produces a list of scheduled and overdue evaluations for inclusion in the maintenance plan.

5.12.6. QA maintains a hard copy or electronic copy (or a combination of both) of all CSEP evaluation reports.

5.13. Communications Standardization and Evaluation Program (CSEP) Exemptions. MAJCOMs may exempt unique functions from CSEP, for example, CRA work centers, power production, systems control, vehicle maintenance, etc. Exemptions will detail the specific requirement exempted (e.g., managerial, technical or personnel). The COM may provide functional assistance to exempted functions as required.

5.13. (ANG) The COM, Chief Mission Systems Flight (CMSF), or Chief Information Systems Flight (CISF) may also require CSEP managerial and personnel evaluations for non-2EXXX technicians in systems control, network control centers, power production, and other functions to further assess training effectiveness.

5.14. Evaluation Guidance, Checksheets and Reports.

5.14.1. If published, evaluation guides will be used during managerial evaluations for subjects such as safety, supply, vehicles, and administration. QA shall use AFMQCCs as evaluation guides for technical and managerial evaluations (see **Attachment 3**).

5.14.2. MAJCOMs will publish MQCCs for MAJCOM-unique systems and to add additional checks to existing AFMQCCs (see **Attachment 3**).

5.14.3. Checksheets serve only as a guide. Additional subjects not covered in the AFMQCC may be assessed during the evaluation. Use the AF IMT 3900, **Quality Control Checksheet**, when developing local technical and managerial evaluation guidelines.

5.14.4. Send locally devised checksheets to the COM for final review and approval before use. Submit local MQCCs, with broad application, to your MAJCOM for potential Air Force publication.

5.14.5. Review locally devised checksheets annually to ensure adequacy and currency.

5.15. Communications Standardization and Evaluation Program (CSEP) Evaluations.

5.15.1. Personnel Evaluations.

5.15.1.1. The personnel evaluation program assesses the effectiveness of a work center's training program, technician competence, and technical and procedural data adequacy. These areas are assessed to ensure equipment or systems are maintained in an effective and efficient manner to meet mission requirements.

5.15.1.2. Technician performance is the measurement standard for training programs. Evaluation results may reflect deficiencies that can be rectified through additional training or training program improvements.

5.15.1.3. Evaluations assess a technician's competence in two elements: Job Knowledge and Job Proficiency.

5.15.1.3.1. The first element is job knowledge--how much does the technician know about the job. This is determined by asking questions about the task during task performance. Additionally, technicians may complete written tests contained in Air Force Qualification Training Packages (AFQTP) and/or use interactive training devices or other sources.

5.15.1.3.2. The second element is job proficiency--how well does the technician perform the job. The criteria for evaluating and analyzing this element is identified in the work center's training plan and the system or equipment technical data used to perform the job. Evaluators observe how well tasks are performed to determine if sufficient skill is demonstrated to verify competency.

5.15.1.4. TO errors or deficiencies discovered during evaluations are reported according to TO 00-5-1. Deficiencies in AFCEMIs are reported according to **Attachment 4** of this instruction. The work center and QA correct deficiencies in LWCs.

5.15.2. Personnel Subject to Evaluation. Military and DOD civilian personnel will follow the evaluation requirements in the following paragraphs. *NOTE:* AFETS, contractor, MEO, and SMT personnel are exempt from personnel evaluations.

5.15.2.1. Evaluations for ATCALS Maintenance Tasks. Military and DoD civilian personnel who are task qualified and perform ATCALS maintenance tasks are subject to personnel, special, and ATCALS certification evaluations.

5.15.2.2. Evaluations for Non-ATCALS Maintenance Tasks.

5.15.2.2.1. Military personnel who are task qualified and perform non-ATCALS maintenance tasks are subject to personnel, Intercontinental Ballistic Missile (ICBM) (if applicable) and special evaluations.

5.15.2.2.2. DoD civilian personnel who are task qualified and perform non-ATCALS maintenance tasks are subject to ICBM (if applicable), and special evaluations.

5.15.2.3. DOD Civilian Personnel. When personnel evaluation results show more training is required, supervisors take action to increase the individual's proficiency. Evaluation results cannot be used to disqualify civilian personnel who are hired for specific jobs under civil service procedures. Disqualification of civilian personnel is according to applicable directives.

5.15.2.4. In overseas units, the COM may exempt local national technicians from personnel evaluations (coordinate with local civilian personnel offices).

5.15.2.5. Maintenance staff personnel may be evaluated under CSEP.

5.15.3. Types of Personnel Evaluations. There are four types of evaluations: Personnel, Special, ATCALS Certification, and ICBM communications.

5.15.3.1. DELETED.

5.15.3.2. Personnel evaluations are conducted by QA to verify the adequacy of the individual's continuation training program and to ensure technician proficiency is being maintained. Evaluate a random sample of work center personnel at least once every 24 months using the sampling plan in **Attachment 15**. Whenever possible, perform personnel evaluations in conjunction with the Managerial Evaluation. **Exceptions**: evaluate ATCALS maintainers according to paragraph **5.15.3.5.** and evaluate traditional Air Force Reserve Command (AFRC) and Air National Guard (ANG) personnel every 48 months.

5.15.3.2. **(ANG)** Evaluate all traditional maintenance personnel assigned to ANG Air Traffic Control Squadron (ATCS), who do not certify equipment in accordance with **Chapter 11**, every 24 months.

5.15.3.3. Special evaluations are either mandatory (directed by a higher authority, such as this instruction or MAJCOM headquarters) or optional (initiated by unit-level work center supervisors). The following are mandatory special evaluations:

5.15.3.3.1. When new types of systems are assigned to the work center, or when major modifications which significantly affect maintenance procedures, are accomplished. A sampling of technicians maintaining this system must be completed within 90 calendar days of systems acceptance or modification completion.

5.15.3.3.2. When technicians are recertified following a CSEP evaluation decertification, an evaluation must be completed within 30 calendar days of recertification. Exception: an evaluation must be completed within 180 calendar days for traditional AFRC and ANG personnel.

5.15.3.3.3. After an ATCALS or navigational aids (NAVAIDS) facility flight evaluation is terminated resulting in an unsatisfactory rating due to technician error or lack of training.

5.15.3.3.4. DELETED.

5.15.3.3.5. When technicians are reassigned back to an ATCALS work center from a staff position and 6 months or more have elapsed since leaving the work center, a special evaluation will be conducted before the commander appoints the individual as a task certifier or facility certifier. The complexity of the tasks selected and scope of the evaluation must meet the requirements of paragraph **5.15.3.5.1.**

5.15.3.3.6. When technical evaluations or deficiency analysis trends indicate a lack of proficiency may be causing system problems or deterioration, an optional special personnel evaluation may be required to identify the cause. Evaluate a sufficient number of personnel to determine the overall effectiveness of the work center's maintenance capability.

5.15.3.3.7. **(Added-ANG)** When training and certification are conducted IAW paragraph **7.5.1.8.6. (Added)**, as supplemented, a special Personnel Evaluation will be conducted to assess the adequacy of the certification and document management actions taken to prevent reoccurrence. Specifically, the evaluation will address how the production work center will ensure self-sufficiency in meeting future training and certification requirements.

5.15.3.4. ICBM communications evaluations are conducted to ensure technician proficiency on command and control systems supporting nuclear missile weapon systems.

5.15.3.4.1. Evaluate each technician every 6 months. Avoid evaluating technicians on the same task in a 2-year period, if possible.

5.15.3.4.2. Evaluate technician proficiency using tasks selected from missile applicable AFJQS or CFETP. Exception: Work centers supporting both missile and base communications missions may perform one base communications (nonmissile) task evaluation per technician in a 2-year period.

5.15.3.4.3. Evaluate a team from each work center that performs Launch Facility (LF) penetration at least annually. This evaluation must include LF emergency operations. *NOTE:* Units maintaining more than one weapon system shall evaluate penetration of all weapon system LFs each year.

5.15.3.5. ATCALS Certification Evaluations are conducted to ensure technicians meet Federal Aviation Administration (FAA) proficiency requirements and are required for all technicians maintaining equipment assigned to the National Airspace System (NAS) or when required by a technical order or agreement with a host nation. Proper and timely evaluations allow Air Force technicians to certify that ground-based radar systems, navigational aids, and air traffic control (ATC) radios meet technical parameters. These evaluations can occur during an evaluation, but must include ATCALS task(s).

5.15.3.5.1. Evaluate all AFSC 2E0X1 and 2E1X2 personnel who are task certified to maintain ATCALS at least once every 12 months. A majority of the tasks selected for the evaluation

must be ATCALS related. ATCALS tasks selected for evaluation must also be of sufficient technical complexity to present a realistic measure of a technician's proficiency. Tasks involving simple meter readings alone will not satisfy this requirement. Evaluations must measure the technician's capability to perform facility certification. The evaluation must also evaluate the technician's ability to determine when an ATCALS facility should be reported to the air traffic control supervisor for possible termination of service and under what conditions the ATCALS equipment/facility can be returned to service. For technicians who maintain both ATCALS and non-ATCALS equipment, one evaluation will suffice if non-ATCALS equipment tasks are included and the above requirements are satisfied.

5.15.3.5.2. DELETED.

Figure 5.1. DELETED.

Figure 5.2. DELETED.

5.15.4. Conducting Personnel Evaluations.

5.15.4.1. Personnel evaluations will be conducted by QA personnel.

5.15.4.1.1. The following exceptions apply:

5.15.4.1.1.1. The COM may direct QARs to assist QA in the performance of personnel evaluations when QA personnel do not possess the required skills or qualifications.

5.15.4.1.1.2. QA must directly supervise QARs on personnel evaluations with exception of personnel evaluations performed by QARs at FSMAs, as directed by the parent unit.

5.15.4.1.1.3. QARs assigned to AFRC and ANG Category III maintenance organizations can conduct personnel evaluations, as directed by the COM.

5.15.4.2. Evaluators are the key to the evaluation program and are not to be the same individual who certified task proficiency of the person being evaluated. Ideally, the evaluator is certified on the tasks being evaluated and possesses the same AFSC at a higher skill level than the individual being evaluated. (Exception: ICBM communications task evaluators must be qualified on the tasks evaluated during personnel evaluations and qualified on the system/equipment to perform technical evaluations.) When this is not practical, the evaluator must be capable of observing and verifying task accomplishment with a TO, manual or other reference. The evaluator must be capable of verifying proper procedures, tools, TMDE, and materials are used, and the task performance conforms to established standards.

5.15.4.3. Before conducting evaluations, evaluators must analyze and select tasks to be evaluated based on deficiency indicators, training management visits, NRTS validations, system performance data, previous evaluations done in the work center and other management indicators. If analysis does not indicate any areas requiring emphasis, evaluators should select tasks not previously evaluated in the work center. Consider all equipment when selecting tasks for personnel evaluations to adequately assess the work center training program effectiveness. Individuals may be evaluated on any task(s) they are qualified on, including troubleshooting techniques, alignments, and repair procedures.

5.15.4.4. Coordinate evaluations with the work center supervisor.

5.15.4.5. Select alternate tasks to avoid the need to reschedule an evaluation when operational requirements do not permit completion of planned evaluations.

5.15.4.6. Brief the technician on the tasks to be evaluated, the rating criteria, and the performance standards prior to beginning the evaluation. Evaluators should focus on the evaluation process, not the specific steps evaluatees must accomplish to pass. Emphasize that the goal is to determine the effectiveness of the work center's training program, not to pass the evaluation.

5.15.4.7. Evaluate three separate and distinct phases - preparation, task performance, and post performance (see **Attachment 14**.)

5.15.4.8. Stop the evaluation if technicians use methods or procedures that could jeopardize safety (including flight safety) or cause equipment damage. Task evaluations may be continued (at the evaluator's discretion) after the hazard is corrected.

5.15.4.9. During the evaluation, ask relevant questions on the methods and procedures used by the technician.

5.15.4.10. Evaluations are complete when the evaluator determines that the technician's performance has been sufficiently evaluated to determine work center training program adequacy and technician proficiency.

5.15.4.11. Brief the evaluatee and the work center supervisor at the conclusion of the evaluation.

5.15.5. Personnel Evaluation Results.

5.15.5.1. A technician's task performance is assessed as either satisfactory or unsatisfactory according to **Attachment 14**. Explanations and recommendations are required for each task rated as unsatisfactory.

5.15.5.2. Unsatisfactory task performance requires an investigation to determine the cause of failure. Route unsatisfactory personnel evaluation reports on all ATCALS certifying officials through the COM to the unit commander and complete decertification/recertification procedures. If the technician is an ATCALS equipment certifier, the commander must suspend the individual's certifier designation for the equipment the individual was decertified on. The commander may reinstate an individual's certifier designation following task recertification and successful completion of a reevaluation.

5.15.5.3. The work center supervisor, certifying official, and trainer must be briefed on noted problem areas as soon as practical following unsatisfactory task performance. Unsatisfactory task performance requires decertification and recertification on the particular task; it does not mean the individual is incapable of performing other tasks.

5.15.5.4. CSEP personnel evaluation results will not be recorded on, or made a part of, documents such as performance reports, unfavorable information files, etc.

5.15.6. Personnel Evaluation Reports.

5.15.6.1. Document personnel evaluations on AF IMT 2419, **Routing and Review of Quality Control Report**, or equivalent automated product. Comments and recommendations are made on the evaluation report to eliminate the need for separate correspondence. The reports also provide a source for analyzing the effectiveness of the overall maintenance training program.

5.15.6.2. Identify task errors, provide recommendations, and explain rescheduling actions. Explain management, system, or equipment discrepancies not directly reflecting on the technician's performance in a separate report.

5.15.6.3. COM must review evaluation reports that document unsatisfactory task results.

5.15.6.4. Unit commander must review unsatisfactory ATCALS personnel evaluation to determine if certifier designation action is required.

5.15.7. Technical Evaluations. Technical evaluations give an overall view of the quality of maintenance. They also provide useful data for identifying training deficiencies and potential problem areas.

5.15.7.1. Technical evaluations will be performed in enough depth to ensure systems and equipment are maintained and managed according to applicable technical data. The following areas will be evaluated as a minimum:

5.15.7.1.1. System performance as indicated by the critical technical parameters. Also, NAVAIDS and ATC radar systems performance will be compared to flight check records and facility/equipment reference data.

5.15.7.1.2. Equipment cleanliness.

5.15.7.1.3. Compliance with standard maintenance practices and equipment safety requirements.

5.15.7.1.4. Corrosion prevention and control.

5.15.7.1.5. Equipment historical files, TO configuration, and completeness using AFTO Form 47X-series, **Electronic Set Inventory Checklists** (when published), automated copies according to TO 00-35D-2, *Electronic Set Inventory Checklist for Ground Communications-Electronic (C-E) Equipment*, and/or master COTS inventories. Units will develop master inventories based on shipping, acceptance, catalog, and other applicable documents for COTS equipment (i.e., Theater Deployable Communications [TDC], Integrated Communications Access Package [ICAP], etc.).

5.15.7.1.6. Applicable mobility markings.

5.15.7.1.7. Compliance with preplanned and time change requirements.

5.15.7.1.8. Management action taken on deferred maintenance actions.

5.15.7.1.9. Verification of the master PMI schedule to ensure all PMIs are scheduled.

5.15.7.1.10. Availability and condition of the technical data, tools, and required TMDE.

5.15.7.1.11. Verify UTC completeness using the pilot unit's Logistics Detail Report (LOG-DET). Refer to AFI 10-403.

5.15.7.1.12. Timeliness and accuracy of ATCALS Certifications Records.

5.15.7.2. Use of appropriate AFMQCCs is mandatory for all technical evaluations. For equipment where AFMQCCs have not yet been published, local checksheets may be used.

5.15.7.2. **(ANG)** Use AF Form 3900, *Quality Control Checksheet*, or an electronic equivalent, for all local checksheets.

5.15.7.3. Do not disassemble equipment solely for evaluation purposes. However, if disassembly is required to conduct the evaluation, make every effort to perform the evaluation in conjunction with a frequent interval PMI, maintenance action, or inspection.

5.15.7.4. Perform technical evaluations on a sample of all equipment and systems at least every 24 months using the sampling plan in **Attachment 15**. **Note**: COM may increase the frequency of technical evaluations based on mission requirements, suspected training problems, uptime rates, etc. The term "all equipment and systems" includes ICBM communications equipment and systems. AFRC and ANG communications flights/squadrons will complete technical evaluations at least every 24 months on equipment that will deploy with their wings/units upon mobilization. ANG Command, Control, Communications and Computers (C4) will determine the evaluation intervals for equipment that supports in-garrison missions at ANG bases/unit.

5.15.7.4. **(ANG)** Perform technical evaluations on all ATCALS systems using a sample of all equipment and systems at least every 24 months for equipment that supports in-garrison missions at base/units. Exception: The sampling plan in **Attachment 15** can be used for like equipment items.

5.15.7.4.1. **(Added-ANG)** Equipment that will deploy as part of ANG wings/units is defined as equipment which is called for as part of a communication flight/squadron designed operational capability (DOC) statement. Deployable equipment that has no in-garrison mission and belongs to other flights or squadrons (for example civil engineering, security forces, etc.) is not part of communications DOC statement and such will not be included in the CSEP. Depending on staffing levels, the COM may choose to include other flights or squadrons deployable equipment in the CSEP. This will be locally determined on a case by case basis.

5.15.7.4.2. **(Added-ANG)** AFMC SM supported equipment is included in the CSEP if it is used to either support in-garrison missions or deployable missions as part of the communications unit DOC statement. The COM will define Non-AFMC SM supported equipment (for example voice switches, CITS equipment, etc.) as either mission critical or non-mission critical. That equipment defined as mission critical will be included in the CSEP. A sample of this equipment will be evaluated every 24 months. The sampling plan in **Attachment 15** will be utilized.

5.15.7.5. Technical evaluations are most effective if performed shortly after scheduled maintenance is performed. Perform these evaluations in conjunction with a short interval PMI or other maintenance action to minimize operational mission disruption.

5.15.8. Technical Evaluation Reports.

5.15.8.1. Use of AF IMT 2420, **Quality Control Inspection Summary**, to document technical evaluation discrepancies is a COM option. Technical evaluation discrepancies may be prepared in a narrative style on bond paper, or equivalent automated product, and attached to the AF IMT 2419 or automated cover letter.

5.15.8.2. Categorize discrepancies as major or minor. A major discrepancy is any deficiency that degrades mission, system, or equipment capability; creates an unsafe condition; or may cause a security violation. A minor discrepancy is any deficiency that does not degrade mission, system, or equipment capability; does not create an unsafe condition; and is not a potential security violation.

5.15.8.3. When technical evaluations show no discrepancies, document this fact on AF IMT 2419 or an equivalent automated product, and file as a completed report.

5.15.8.4. Document special technical evaluations the same way as technical evaluations. Do not document special technical evaluations that reveal no discrepancies on an AF IMT 2419 if an acceptance or commissioning document, such as an AFTO Form 217, **Certification of Mobile Depot Maintenance Accomplished**, or AF Form 1261, **Communications and Information Systems Acceptance Certificate**, is signed.

5.15.9. Managerial Evaluations. QA managerial evaluations provide the unit commander, COM and supervisors with factual, objective assessments of a section's ability to meet its mission requirements. To do this, it is necessary to collectively evaluate management effectiveness, equipment and systems condition, and the performance and technical proficiency of assigned personnel.

5.15.9. **(ANG)** If no QA work center is assigned (e.g. Category III or Category IV units), the COM may implement a self-inspection program and perform managerial evaluations on the production work centers responsible for performing maintenance on C-E equipment and systems. The COM will utilize published AFMQCCs, and publish local checksheets as required, to evaluate all categories specified by paragraph **5.15.10.7.**

5.15.9.1. Perform managerial evaluations on each staff function and work center at least every 24 months (every 48 months for AFRC and ANG units). Managerial Evaluations will use results from other base agency evaluations when ever possible, (i.e., safety, training). Ensure applicable areas listed in paragraph **5.15.10.7.** are evaluated every 24 months (every 48 months for AFRC and ANG units).

5.15.9.2. Perform a managerial evaluation when the results of an IG evaluation or higher headquarters staff visit indicate less than satisfactory performance or noncompliance by a work center, staff function, or functional area. Perform the evaluation within 4 months (8 months for AFRC and ANG units) of the IG or higher headquarters evaluation or visit.

5.15.10. Conducting Managerial Evaluations.

5.15.10.1. Before beginning managerial evaluations, review reports of previous managerial, technical, and personnel evaluations. Review other evaluation reports such as administrative files evaluations, IG evaluations, operational evaluations, and ATCALS analysis and flight checks. Also, staff assistance visit reports, maintenance analysis trend data, JDD and IMDS products, NRTS actions, and any other relevant management indicators.

5.15.10.2. Make impartial, factual, pertinent, and complete observations to identify deficiencies. Identify commendable practices and programs, especially those that may be useful to other work centers.

5.15.10.3. Demonstrate proper procedures and provide assistance to help work center and staff personnel meet mission requirements.

5.15.10.4. Ensure affected supervisors fully understand findings before formal evaluation reports are written.

5.15.10.5. Contact the work center's customers to determine if the work center is supporting their mission requirements.

5.15.10.6. Evaluate subject areas in enough depth to ensure the results indicate the actual condition of the activity. Not all areas require 100 percent evaluation for the evaluator to make this determination. Use the sampling plan provided in **Attachment 15**.

5.15.10.7. Determine how well work centers and support functions meet production and management requirements and if established procedures are followed. The minimum evaluation items include:

5.15.10.7.1. Compliance with the intent of this instruction, associated and local directives, safety and security rules and procedures.

5.15.10.7.2. Equipment and system condition and performance. QA will perform technical evaluations on a representative sample of equipment using the sampling plan in **Attachment 15**. QA will determine the need to perform additional technical evaluations. Consider equipment recently repaired in order to assess the quality of repair actions such as alignments, component or printed circuit board replacement, and soldering. Check integrity and optimum operation of system monitors for ATCALS facilities.

5.15.10.7.3. Compliance with the PMI schedule.

5.15.10.7.4. Compliance with the Hazardous Material (HAZMAT) and Hazard Communications (HAZCOM) programs.

5.15.10.7.5. Compliance with local, state, federal, and host nation environmental policy and guidance.

5.15.10.7.6. Backup power run up procedures.

5.15.10.7.7. Cannibalization procedures and documentation.

5.15.10.7.8. Corrosion prevention and control program.

5.15.10.7.9. Compliance with Electrostatic Discharge practices, where applicable according to TO 00-25-234.

5.15.10.7.10. Check adequacy of training plans and training materials. Check training documentation, progression, and task coverage. Ensure required UTC training in support of AEF requirements is identified and incorporated into the training plan. QA will perform personnel evaluations on a representative sample of technicians using the sampling plan in **Attachment 15**. **Note***:* It is important at short tour locations that sufficient personnel evaluations are performed to ensure the adequacy of training programs.

5.15.10.7.11. Compliance with job documentation and data accuracy.

5.15.10.7.12. TMDE management to include: availability of required TMDE, limited and special calibration requirements, condition and calibration status, storage and handling, etc.

5.15.10.7.13. Availability, management and condition of tools.

5.15.10.7.14. Supply management to include: supply discipline, bench stock, supply point, and adjusted stock level management, reparable processing, Custodian Authorization/Custody Receipt Listing (CA/CRL), Information Technology Asset Management System (ITAMS), Mission Support Kit (MSK) and Readiness Spares Package (RSP) management.

5.15.10.7.15. Use and condition of government vehicles.

5.15.10.7.16. Technical data to include maintenance of TO files, availability, and use of required technical and commercial data.

5.15.10.7.17. Standard and specialized publications to include: the adequacy and availability of required publications, publications familiarization and use of files, and the clarity and accuracy of the local directives for which the work center or function is OPR or office of collateral responsibility (OCR).

5.15.10.7.18. Work center facility, systems installation and equipment records.

5.15.10.7.18. **(ANG)** Include all facility and equipment/system records as required in **Chapter 11**, basic publication and supplement, for work centers that certify ATCALS.

5.15.10.7.19. Adequacy and accuracy of system or equipment historical files.

5.15.10.7.20. General housekeeping practices to include the condition of facilities and non-mission equipment.

5.15.10.7.21. Actions to ensure adequacy of logistics support requirements for new systems.

5.15.10.7.22. Adequacy of staff support to the work center or function being inspected.

5.15.10.7.23. Compliance with NRTS procedures.

5.15.10.7.24. Compliance with the Radio Frequency Radiation Safety Program according to AFOSHSTD 48-9, *Radio Frequency Radiation (RFR) Safety Program*.

5.15.11. Evaluation Reports. Provide complete, accurate, and impartial reports with sound recommendations designed to help correct discrepancies and eliminate underlying causes. Include specific references so that work center or office personnel understand and know where to find procedures to correct deficiencies.

5.15.11.1. Reference deficiencies that result from procedural omissions or repeated errors. Failure to perform checks to ensure publications are current or determine out of tolerance system or equipment measurements exist are examples of procedural deficiencies.

5.15.11.2. References are not required when a deficiency or isolated minor error is easily understood and corrective action is obvious. General housekeeping practices, equipment cleanliness, and standard supervisory responsibilities and safety practices are examples of areas that may not require references. QA evaluators must take care not to assume all such practices and responsibilities are commonly recognized and understood.

5.15.11.3. Deficiencies caused by inefficient or ineffective management practices may require the use of rationale since a specific reference may not be published. The COM resolves differences of opinion over the validity of the type of discrepancy before reports are finalized.

5.15.11.4. Identify all MQCCs used during all evaluations. Indicate interval and date of most recent PMI on technical evaluations.

5.15.11.5. Include recommendations for corrective actions with each deficiency, except where the corrective action is obvious. The goal is to provide ideas and guidance to assist the work center in correcting the deficiency.

5.15.11.5. **(ANG)** Document follow-up actions taken to resolve discrepancies. Ensure management actions provide a permanent resolution that will prevent repeated and related discrepancies.

5.15.11.6. Document favorable comments, as well as deficiencies on CSEP evaluation reports.

5.15.11.7. Note that proper report routing and follow-up actions are important. Evaluations are of no value unless the discrepancies are recognized and corrected by appropriate managers.

5.15.11.8. The COM is the closing authority for CSEP evaluations. The COM may indicate closure by concurrence or nonconcurrence with QA's recommendations. The COM may delegate closing authority for technical evaluation reports that identify only minor or no discrepancies.

5.15.11.9. Note that evaluation reports need not include minor administrative or management deficiencies if, in the evaluator's judgment, the deficiency is an isolated incident and does not indicate an overall management deficiency. If not included in the formal report, provide information about minor errors in a memo to the work center. Memorandums do not require an answer.

5.15.11.10. Use of AF IMT 2420 to document managerial evaluations is a COM option. Managerial evaluations results may be prepared in a narrative style on bond paper and attached to the AF IMT 2419 or equivalent automated product.

5.15.11.11. Managerial evaluations reports address minimum coverage areas and list deficiencies found in the areas of management, system equipment, and task performance. Reports show correlation between deficiencies, if applicable. Additionally, the reports address production and mission requirements not being met and the causes behind these shortfalls.

5.15.11.12. Document special evaluations of management problems or those covering the management and technical aspects of a subject the same way as managerial evaluations.

5.15.12. Special Evaluations.

5.15.12.1. Special evaluations are either mandatory (directed by a higher authority such as a MAJCOM headquarters) or optional (initiated by unit level management) and cover managerial or technical subjects.

5.15.12.2. Mandatory Special Evaluations are required to:

5.15.12.2.1. Identify problem areas and suggest corrective actions to restore systems or equipment to technical specifications after unsatisfactory ATCALS system performance. Evaluate technical and managerial areas to prevent a recurrence of unsatisfactory ATCALS system performance.

5.15.12.2.2. Determine the TO completeness, serviceability, and modification status of system end items and major assemblies when items are transferred to or from the maintenance activity. For COTS equipment (i.e., TDC, ICAP, etc.), units will develop master inventories based on shipping, acceptance, catalog and other applicable documents.

5.15.12.2.3. Determine if equipment or systems installed, overhauled, modified, modernized, or relocated meet technical and installation requirements (including C-E self-help projects). When several like items are being modified, perform a special evaluation on the first few completed items to minimize corrections to all items. Ensure facility records and technical data are current and adequate.

5.15.12.2.4. Determine if on-site Mobile Depot Maintenance (MDM) is adequate. Provide results to the COM or designated representative prior to the certification of work on AFTO Form 217 according to TO 00-25-108.

5.15.12.3. Optional Special Evaluations are performed to:

5.15.12.3.1. Investigate known or suspected management problems and provide recommendations for corrective actions.

5.15.12.3.2. Survey equipment or systems to verify failure trends or marginal performance.

5.15.12.3.3. Ensure TMDE initial issues meet TO configuration and physical serviceability requirements.

5.15.12.3.4. Evaluate the quality of operator maintenance on power generating equipment, and assess the ability of authorized work center personnel to quickly place the power generators into safe and sustained operation.

5.15.12.3.5. Determine if adequate corrective action was taken to correct major deficiencies identified during technical evaluations.

5.15.12.4. Examples of when to perform a Special Evaluation.

5.15.12.4.1. When further job progress makes evaluations impractical or impossible.

5.15.12.4.2. When EI QA inspectors are on site, perform in-process and final acceptance evaluations in conjunction with EI QA evaluations.

5.16. Reliability and Maintainability (RM) Support and Concept. Field unit RM support comes primarily from the feedback mechanisms of proposed equipment modifications, material deficiency reports, and TO improvement recommendations. Unit-level organizations contribute to the RM concept by maximizing self-sufficiency and analyzing work center management and the performance of technicians and systems.

5.17. Deficiency Analysis.

5.17.1. Deficiency analysis provides managers, at all levels, with an analysis of the maintenance techniques used to ensure operational reliability of C-E equipment, the health and effectiveness of training programs, and the effectiveness of work center or staff function management practices. Deficiency analysis is the process of determining the real, underlying cause of deficiencies.

5.17.2. During evaluation report preparation QA personnel review noted errors and deficiencies, grouping like deficiencies into single categories, when appropriate. One or two minor errors that were corrected immediately may not seem significant by themselves; however, several instances of the same type of error could constitute a significant deficiency capable of impairing the unit or wing mission. QA personnel must be alert for patterns of recurring errors, in a single work center or throughout the maintenance complex. Patterns could indicate serious problems.

5.17.3. QA identifies to the appropriate staff function patterns of errors and deficiencies found during all forms of evaluations. These deficiencies may indicate that additional guidance and training are needed in a specific area or function.

5.17.4. Prior to completing and documenting evaluation results, QA personnel must, in conjunction with the affected work center supervisor, attempt to identify the underlying problem and provide a recommended corrective action. Deficiencies are often only symptoms of an underlying problem. Management actions, which result in ineffective supervision, inadequate training programs, insuffi-

cient manning, lack of proper tools, test equipment, parts or supplies, or a combination of these, and other factors may be at the root of the identified problem.

5.17.5. Reviewing work center responses to evaluations determines if the corrective action taken was capable of correcting the underlying problem. QA personnel must realize that there may be multiple methods capable of correcting the noted deficiency. The goal is to permanently correct the deficiency and not to pursue a particular method of corrective action.

5.17.6. QA personnel must be intimately involved in investigating the deficiency or error trend and in the formulation of management actions targeted at resolving these deficiencies or error trends.

5.17.7. QA will provide the commander, COM and the maintenance organization a deficiency analysis summary quarterly. See **Attachment 10** for a sample deficiency analysis summary. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https:// private.afca.af.mil/c-e_maint**. To develop the summary, QA will:

5.17.7.1. Identify trends and deficiency patterns by reviewing CSEP evaluation results and soliciting feedback from other staff functions.

5.17.7.2. Investigate and verify error trends and deficiency patterns by using applicable source data. The source data can include, but is not limited to, NRTS actions, AFTO IMTs 22, IG evaluation reports, higher headquarters staff visit, customer feedback, training reports, deficiency reports, maintenance data, and equipment up-time rates.

5.17.7.3. Identify the underlying cause of the deficiency.

5.17.7.4. Identify the impact of the deficiency.

5.17.7.5. Identify the corrective actions already taken to resolve the deficiency.

5.17.7.6. Recommend management action(s) to permanently correct the deficiency.

5.17.7.7. Base the analysis on errors trends and deficiencies collected during the summary period. Compare the results to the deficiency analysis from previous summary reports.

5.18. Reporting Materiel and TO Deficiencies.

5.18.1. Locally identified problems in materiel and technical publications are normally solved outside the maintenance activity. For non-AFMC Single Manager (SM) supported, MAJCOM acquired and/or developed systems and equipment, and unit acquired systems and equipment, refer to procedures specified in the contract or warranty.

5.18.2. Review, process and monitor deficiency reports according to TO 00-35D-54. Refer to AFMAN 23-110 for additional guidance on submitting Standard Form 364, **Report of Discrepancy/ Supply Discrepancy Report (ROD/SDR)**. Use an automated means to record and monitor deficiency reports.

5.18.3. Review, approve, process and monitor AFTO IMTs 22 according to TO 00-5-1. Signing the AFTO IMT 22 indicates approval, and verifies the report accurately reflects the deficiency, the need for change, and the desired correction. Use an automated means to record and monitor AFTO IMTs 22.

5.18.4. Initiate and follow up on all correspondence related to the development of new publications, conflicts between publications, or clarification of technical data not subject to AFTO IMT 22 reporting. Send this correspondence through command channels.

5.19. Unit Self-Sufficiency Program.

5.19.1. The goal of the Unit Self-Sufficiency Program is to maximize readiness during peacetime and sustainability during wartime in support of the MAJCOM, wing, and base mission. Program objectives are to improve mission capability by repairing equipment at the lowest practical level of maintenance, reduce system downtime caused by delays in obtaining repair parts or replacement assets, and minimize transportation and handling costs. To meet these objectives, maintenance technicians, support staff, and managers work together to identify and obtain repair authorization for every system component or part not currently authorized repair but for which a feasible and economical unit repair capability exists. They then must strive to restore to serviceable condition every item for which a base repair capability exists. Carefully consider the intent of the Unit Self-Sufficiency Program when challenging established maintenance concepts. See **Figure 5.3.**

5.19.2. QA manages the Unit Self-Sufficiency Program according to TO 00-20-3, TO 00-25-195, *Source, Maintenance, and Recoverability Coding of Air Force Weapons, Systems, and Equipment*; this instruction; and command and base directives.

5.19.3. The program includes the NRTS review process and repair code change request submissions.

5.19.4. QA applies prudent management during the NRTS review process and review of repair code change requests. The goal is to improve self-sufficiency through maximum use of available resources, not to develop a new, and perhaps costly, repair capability. Do not delay returning repair cycle assets to depot as NRTS while taking extraordinary measures to obtain parts or support items needed for repair. Once a determination has been made that a repair capability is not readily available on base, process the repair cycle assets (other than XF coded items) for higher-level repair. This permits the assets to be made serviceable and available for issue.

Figure 5.3. Self-Sufficiency.
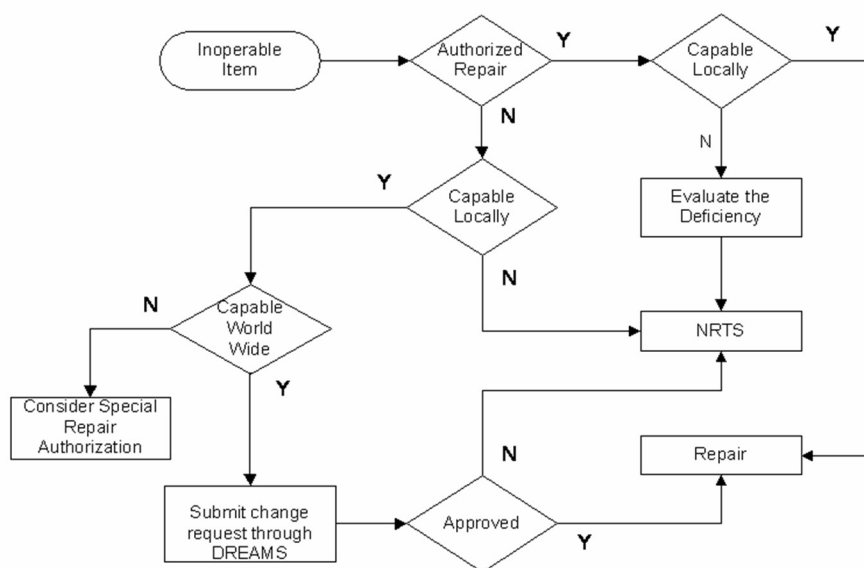
5.20. NRTS Validation and Review Process.

5.20.1. The NRTS validation and review process is designed to evaluate the NRTS program across the entire maintenance complex. NRTS validation ensures assets are repaired on base when it is economically feasible and within existing capabilities. The main purpose is to identify negative trends and employ managerial actions (i.e., acquiring test equipment, correcting technical data, obtaining additional training, etc.) to eliminate or reduce future NRTS actions. QA will:

5.20.1.1. Validate all NRTS actions. Record validation of the NRTS action on MDC documents and condition tags and forward the asset to Materiel Control for further processing.

5.20.1.2. Assist the production work centers in the NRTS process, if necessary.

5.20.1.3. Maintain an automated or manual NRTS Action Register documenting the following entries as a minimum. Obtain this data from production work centers to enable proper trend and deficiency analysis:

5.20.1.3.1. End Item Data: Noun, ID Number, and SRD Code.

5.20.1.3.2. NRTS Item Data: National Stock Number (NSN), Part Number, Nomenclature, WUC, Expendability, Recoverability, Reparability Code (ERRC), Source, Maintenance, and Recoverability (SMR) code, TO Number-figure-index, and Explanation of Discrepancy.

5.20.1.3.3. NRTS Code Data: NRTS Code used and rationale, Action Taken to preclude future similar NRTS Actions.

5.20.1.4. Determine if effective work center managerial action was taken to preclude future similar incidents.

5.20.1.5. Advise COM and all production work centers of identified trends, as well as potential benefits recognized during the analysis process.

5.21. Repair Code Change Requests.

5.21.1. Many items that could be repaired at the local level are currently being disposed of at base level (including XB items) or being returned to the depot for repair. Other reparable items have improper SMR codes, resulting in their disposal rather than repair. Self-sufficiency programs focus attention on the problem and include procedures for processing proposed SMR code changes.

5.21.2. Submit SMR code change requests to correct SMR code errors or inconsistencies in TOs or to change the authorized level of repair or condemnation according to TO 00-25-195. SMR code change requests are submitted using the Document Routing Entry and Mail Submitter (DREAMS) located at **https://www.asc.wpafb.af.mil/infocen/smr**. QA will maintain an automated means to record and monitor SMR change requests.

5.21.3. Note that the self-sufficiency program is not intended to establish a base-level repair capability for items that can be more economically repaired at a depot. To ensure this does not happen, initiators, supervisors, and QA should consider the following when developing and evaluating an SMR code change request:

5.21.3.1. Will local repair action get the job done faster, easier, more economically, or better than the present method?

5.21.3.2. Can local repair be accomplished using existing shop space, support equipment (including prudent use of on-line equipment for troubleshooting), and current work center manpower authorizations? If not, will the required additional skills, man hours, and support assets be available on a regular basis to do the job without impacting unit mission capability? Does the item fail often enough and would any local repair savings outweigh the cost of additional support equipment, facilities, and manpower?

5.21.3.3. Can work center technicians learn the job through OJT or using knowledge already received in technical schools? If not, can AFETS personnel or other training sources provide the instruction?

5.21.3.4. Even though it makes sense for one unit to accomplish the work locally, is it practical to expect all units to do it themselves, or would it be better to obtain special repair authority from the system/item manager based on a locally unique capability? If the system or equipment is deployable, can the support equipment and tools needed to do the work be transported, used, and supported in the field without impairing either the deployed or in-garrison mission? Will adequate shop facilities be available to do the work, especially in a conflict area?

5.21.3.5. Finally, does repairing the item locally enhance mission readiness during peacetime, improve support to the base mission, or sustain the mission longer during wartime?

5.22. Logistics Support Program.

5.22.1. The communications unit Planning & Implementation (P&I) function manages the base infrastructure, supportability of new systems, contract management, short- and long-term C-E planning,

C-E contingency and war support, and is the repository for planning and contingency support information. The COM must know of mission changes, new programs, new support agreements, and any impacts on existing maintenance concepts and resources. QA makes full use of P&I to avoid duplicating P&I functions within the maintenance activity.

5.22.2. QA works with P&I to:

5.22.2.1. Ensure all logistics support areas are considered before accepting new support responsibilities. Early planning is essential. As a minimum, ensure the following areas of support are secured prior to acceptance:

5.22.2.1.1. Test and support equipment are on-hand, and calibration requirements satisfied.

5.22.2.1.2. Special and common tools are available.

5.22.2.1.3. Peculiar performance monitoring or fault isolation equipment is available.

5.22.2.1.4. Special or unusual facility requirements are in place.

5.22.2.1.5. Technical data, supply support, and training requirements are identified and satisfied.

5.22.2.2. Ensure P&I is provided with the necessary functional or technical expertise and assistance to:

5.22.2.2.1. Review contract PWS and/or SOW development.

5.22.2.2.2. Evaluate key logistics support elements for new or modified systems and equipment (i.e., radio frequency approval, request for service [communications circuits], etc.).

5.22.2.2.3. Develop technical solutions.

5.22.2.2.4. Review and evaluate programming documents and Engineering and Installation (EI) proposals. (Refer to **Attachment 2** and AFMQCC 200-3.)

5.22.2.2.5. Ensure successful completion of self-help projects. (Refer to **Attachment 2** and AFMQCC 200-3.)

5.22.2.3. Review projects, plans and agreements to ensure C-E maintenance taskings are met.

5.22.3. The P&I function supports the maintenance activity by:

5.22.3.1. Addressing the key logistics support elements before accepting support responsibility for new or upgraded equipment or systems. The logistics support elements for system sustainment are listed in **Chapter 10**.

5.22.3.2. Monitoring project and program status and submitting appropriate DOD, Air Force or MAJCOM reports.

5.22.3.3. Keeping the COM informed of logistics support milestones; changes to or new QA requirements resulting from agreements, plans, etc.; and functional and technical support requirements.

5.22.3.4. Managing maintenance contracts and providing the maintenance activity with appropriate contract information.

5.23. Maintenance Training Program. Training provides the maintenance activity with the skills needed to accomplish its mission. The purpose of the Maintenance Training Program is to monitor all maintenance training requirements and assist work centers to develop and implement effective training programs. QA must be aware of the maintenance activities training needs and all available training resources to satisfy these needs. QA must also know the maintenance activity's training status. QA will not duplicate unit training manager duties. *NOTE:* Reference AFJQS 2EXXX-201J, *Maintenance Training Program*, to accomplish task qualification training.

5.23.1. Maintenance Training Program Procedures. QA will:

5.23.1.1. Evaluate the Maintenance Training Program on a continuing basis.

5.23.1.2. Review personnel evaluations and other reports, such as managerial and technical evaluations, flight checks, system performance reports, IG evaluation reports, and ATCALS evaluations to determine if training deficiencies or problems are indicated.

5.23.1.3. Visit each activity, work center, and staff office regularly. Ensure mandatory AFJQSs and AFQTPs are used, managed and administered according to applicable directives. Ensure all applicable AFQTP knowledge evaluation pamphlets and surveys are completed and submitted according to AFQTP instructions.

5.23.1.4. Ensure AFJQS for AEF UTC training, AEF Just-In-Time training and other resources are available and accomplished prior to unit deployments.

5.23.1.5. Review deficiencies that indicate possible training problems with the responsible supervisor and provide assistance as needed.

5.23.1.6. Review IMDS training management products such as the COM Summary and Training Visibility Ledger (TVL), or the equivalent manual documentation for possible deficiencies in task coverage or training progress.

5.23.1.7. Assist work center supervisors to develop the work center Master Training Plan (MTP).

5.23.1.8. Assist supervisors and trainers to meet specific training needs. Assist supervisors to develop and use effective, on-going training programs.

5.23.1.9. Manage the maintenance activity's formal training requirements and quotas. Coordinate with the unit training manager to obtain training materials, course information, and guidance on training problems.

5.23.1.9.1. Consolidate all maintenance training requirements. Submit requirements through appropriate unit channels. Control quotas received and take action to preclude recurrence of unused quotas.

5.23.1.9.2. Identify course shortages or personnel to fill course quotas and recommend appropriate actions to the COM.

5.23.1.10. Act as the screening point for C-E training policy and the prioritization of training product development.

5.23.1.11. Keep the COM informed of the maintenance activity's training posture.

5.23.1.11.1. Provide the COM status of maintenance training programs monthly.

5.23.1.11.2. Provide the COM with a maintenance training summary quarterly. Include negative training trends, the underlying cause(s), and recommendations to improve the deficient area.

5.23.1.12. Ensure ETS personnel are used effectively to train work center personnel.

5.23.1.13. Manage and control the IMDS personnel and training subsystems.

5.23.1.13.1. Ensure all maintenance personnel information is entered into the personnel subsystem.

5.23.1.13.2. Ensure newly assigned individual training records are initiated in the training subsystem and that work centers enter specific task assignments.

5.23.1.13.3. Assist work center supervisors to validate the Training Task Table (TTT) listing for accuracy by comparing the training products located on the 81TRSS Q-Flight website: **https://wwwmil.keesler.af.mil/81trss/qflight** and the USAF CBT website located at the following website: **https://www.smartforce.com/learning_community/Custom/USAF/login.asp**. Provide instructions and direction to update affected task tables, if required.

5.23.1.13.4. Ensure maintenance training courses are documented as ancillary training in IMDS or as formal training on the AF Form 623, **Individual Training Record Folder**.

5.23.1.13.5. Request and distribute training schedules and background products as necessary.

5.23.1.13.6. Before individuals depart permanent change of station (PCS), ensure they possess a current copy of their CFETP, are removed from the personnel and training subsystems, and are given the appropriate training products (includes ancillary training) to carry to their next duty station. Gaining units desiring training data in any other form will coordinate with the losing unit prior to the individual's departure.

5.23.2. Maintenance Management Training Program Procedures. This program ensures all maintenance personnel are aware, to the extent required by their position, of the many aspects of the maintenance management system described in Air Force and command directives. To administer this program, QA will:

5.23.2.1. Review work center and staff office training programs to ensure appropriate maintenance management tasks are identified for training and the training is progressing.

5.23.2.2. Arrange for staff subject matter specialists to brief or discuss changes in maintenance management policy and procedures. In most cases, these briefings can be accomplished during maintenance meetings; however, major changes in policies or procedures may require a broader more formal training approach.

5.23.2.3. When possible, Air Education and Training Command (AETC), Mobile Training Teams (MTT), Field Training Detachments (FTD) and command managed courses should be used to provide more detailed training on various maintenance management subjects.

5.23.2.4. Promote work center participation in evaluating AETC training programs. Review Graduate Assessment Surveys (GAS) for possible training support problems. Discuss deficiencies or support problems with the responsible supervisors and provide assistance if needed.

5.24. Air Expeditionary Force (AEF) and Mobility Response Actions. In units with deployable UTCs, QA will include all UTC-assigned maintenance personnel and UTC-assigned maintenance work centers in the CSEP, regardless of AFSC, to include personnel, technical and managerial evaluations. This could include, but is not limited to, Power Production, Aerospace Ground Equipment (AGE), and Heating, Ventilation and Cooling (HVAC) personnel. QA will take the following predeployment actions when the unit receives a mission tasking order:

NOTE: Refer to **Chapter 8** for deployed maintenance management procedures.

5.24.1. Conduct special evaluations on all equipment/UTCs prior to being turned-in to supply, transferred to another organization or after being received from another unit. One copy of the special evaluation report will be included in the documentation shipped with the equipment. A second copy will be maintained by QA for a minimum of 2 years or until all discrepancies are corrected and the report is closed.

5.24.2. Turn-in or transfer inspections will determine the operational status of the system or end item and its completeness. QA and the affected flight's personnel will:

5.24.2.1. Perform system or equipment operational checks specified in all applicable AFMQCCs and perform an inventory (using AFTO Form 47X-series or automated copies where applicable) of all equipment and support items that are being turned-in or transferred.

5.24.2.2. Document the turn-in or transfer inspection in IMDS as a special inspection. Print a snapshot to accompany the equipment before deleting the Equipment ID from IMDS. If IMDS is not available, this snapshot will be manually documented.

5.24.2.3. Notify COM and Maintenance Superintendent, who will determine if discrepancies should be corrected before the turn-in or transfer action occurs.

5.24.3. Conduct or participate in predeployment and postdeployment special evaluations. The COM determines the number and frequency of these evaluations.

5.24.4. Air Mobility and Road Mobility Evaluations. QA will conduct air mobility cargo in-check and road mobility evaluations to ensure loads for airlift or road convoys are safe, configured and packed properly, and that the transportation documentation is correct.

5.24.5. Fuel Handling Surveillance. When maintenance personnel have the responsibility for refueling vehicles and/or power production equipment, QA must observe fuel handling methods and procedures at least quarterly. Fuels must be dispensed in accordance with the prescribed safety standards and with the refueling or defueling procedures in applicable instructions.

Chapter 6

MATERIEL CONTROL

6.1. Introduction. Materiel Control coordinates with support agencies and assists maintenance personnel by expediting all supply transactions. The materiel controller is the primary liaison between the maintenance activity and the Logistics Readiness Squadron (LRS). Refer to AFMAN 23-110 and TO 00-20-3.

6.2. Materiel Control Responsibilities. The COM provides written procedures and guidance to ensure Materiel Control has the responsibility and authority to function successfully. The commander and COM will ensure nonmaintenance related duties do not interfere with Materiel Control responsibilities. Materiel Control will:

6.2.1. Resolve all supply related issues and problems, confirm maintenance supply data and status, forecast supply requirements for maintenance, and participate in maintenance meetings.

6.2.2. Advise maintenance managers of the overall supply situation as it affects maintenance and recommend ways to improve supply support.

6.2.3. Provide or obtain training and assist work centers on all supply matters. This can be any combination of written procedures, recurring training, or daily routine assistance.

6.2.4. Maintain liaison with each maintenance property custodian and the LRS to ensure adequate supplies and equipment are on hand to meet maintenance needs and mission requirements.

6.2.5. Coordinate with the LRS to set up organizational codes, shop codes, and delivery destinations to receipt for property (e.g., issues and due-out releases) and to process serviceable and unserviceable turn-ins.

6.2.6. Coordinate with the LRS, the COM and work center supervisors for bench stock, special levels, and supply points requirements. Act as central point of contact on all matters in these areas.

6.2.7. Maintain close liaison with the LRS and/or the applicable Regional Supply Squadron (RSS) to ensure MICAP reportable items are reported and nonmission capable supply requirements are satisfied. Ensure correct use of Force Activity Designator (FAD), UND and requisition priorities.

6.2.8. Establish follow-up procedures to be used when unsatisfactory supply support is identified. When requested by a maintenance work center, take aggressive follow-up action on all requisitions.

6.2.9. Reconcile with the MOC and applicable work center on due-outs for UND "A" requisitions daily. Reconcile due-outs for UND "B" requests weekly, using D18, *Priority Monitor Report* or IMDS Supply Subsystem Inquiry.

6.2.10. Set up procedures to route, store, and control repair cycle assets and act as the repair cycle monitor to include Due In From Maintenance (DIFM), AWP, and Equipment Inoperative for Parts (EIP) for the maintenance complex. Coordinate with work centers, MOC, COM, and LRS to ensure proper management of repair cycle assets.

6.2.11. Act as the monitor for the maintenance complex on Low Density Level (LDL) requests.

6.2.11.1. Consolidate inputs from work centers to change LDLs and forward to MAJCOM for validation.

6.2.12. Coordinate with the LRS to ensure all required TCTO kits and time change items are promptly requisitioned and delivered to maintenance.

6.2.13. Coordinate with the LRS to ensure TCTO actions are accomplished on supply controlled spares.

6.2.14. Advise maintenance personnel of issue procedures for the Interchangeable and Substitute Group (I&SG) items.

6.2.15. Coordinate with each work center to ensure RSP assets requiring functional checks are identified and provide the data to the LRS.

6.2.16. Coordinate the use of RSP assets to satisfy priority parts requisitions.

6.2.17. Serve as the zero overpricing (ZOP) monitor and maintain a file of price challenges forwarded to the LRS.

6.2.18. Serve as the maintenance complex precious metals recovery monitor.

6.2.19. Serve as maintenance turn-around (TRN) monitor.

6.2.20. Coordinate with the maintenance complex and the LRS each June and December to update and/or validate the Receipt Authorization Requirements for Classified Property List.

6.2.21. Advise maintenance personnel of the Uniformed Materiel Movement Issue Priority System (UMMIPS) time standards to ensure requirements are met within the prescribed standards and to prevent priority abuse.

6.2.22. Advise the maintenance complex on the use of repair cycle asset initial issue procedures.

6.2.23. Assist the maintenance complex in handling non-AFMC SM supported assets such as COTS equipment covered in a commercial contracts.

NOTE: Do not assign Materiel Control personnel with custodial responsibility for tools, equipment or supplies located in other work centers or staff offices.

6.3. Aerospace Expeditionary Forces (AEF) and Mobility Response Actions. For units with deployable UTCs, Materiel Control will take the following predeployment actions when the unit receives a mission tasking order:

NOTE: Refer to **Chapter 8** for deployed maintenance management procedures.

6.3.1. Coordinate with the local LRS and work center personnel to identify deploying assets. The preparatory steps are essential to maintain equipment accountability and inventory control at the deployed location. The deployment plan will outline specific supply deployment procedures (i.e., organizational codes, shop codes, Stock Record Account Number (SRAN), equipment account, etc.)

6.3.2. Assist in coordinating the transfer of UTC assets and RSPs.

6.3.3. Verify RSP status when mission directives or tasking orders are received.

6.3.4. Coordinate pick-up and turn-in times with the LRS RSP representative and the group supply representative when required.

6.3.5. Ensure procedures for RSP asset use are developed and briefed to responsible deploying personnel.

6.3.6. Work with the LRS or group RSP monitor to ensure RSPs are fully stocked prior to deployment for contingency operations and Joint Chiefs of Staff (JCS) exercises. Exception: Not required for local training exercises.

6.3.7. Coordinate with the LRS commander, the COM, and work center supervisors for bench stock, pre-positioned spares, RSP and MSK. Act as central point of contact on all matters in these areas.

6.3.8. Determine RSP fill rates for Status of Resources and Training System reporting.

Chapter 7

MAINTENANCE PRODUCTION WORK CENTERS

7.1. Introduction. The following paragraphs describe C-E maintenance production work centers, their organization, their relationship to other maintenance functions and prescribe a work center supervisor's overall responsibilities. *NOTE:* Refer to **Chapter 8** for deployed maintenance management procedures.

7.2. Description and Functional Relationships. Maintenance production work centers are the production elements under the COM and are responsible for accomplishing all maintenance. Maintenance production work centers are supported by and must maintain a close working relationship with the maintenance staff.

7.3. Work Center Supervisor Responsibilities. Work center supervisors ensure the timely and efficient accomplishment of quality maintenance. Success depends on the ability to manage and use available resources. A close working relationship must be kept with the maintenance staff. Work center supervisors are working supervisors who must be aware of all direct maintenance actions and participate as needed. The range and scope of work center supervisors' responsibilities are extremely broad. All work center supervisors and assistants will complete AFQTP 2EXXX-201L, *Communications-Electronic (C-E) Work Center Managers Handbook,* within 180 days of assuming responsibility (unless previously completed and documented).

7.4. Work Center Safety. Work center supervisors enforce safety practices according to Air Force directives, command publications, and 48-series and 91-series AFOSH standards.

  7.4.1. Implement and effectively manage the work center Radio Frequency Radiation Protection program according to AFOSHSTD 48-9.

  7.4.2. Implement and effectively manage the work center HAZMAT and HAZCOM programs according to AFOSHSTD 91-50, *Communications Cable, Antenna, and Communications-Electronic (C-E) Systems,* and AFOSHSTD 161-21, *Hazard Communication*. *NOTE:* AFOSHSTD 161-21 will be replaced by AFI 90-821, *Hazard Communication*.

  7.4.3. Implement and effectively manage the work center Confined Space program according to AFOSHSTD 91-25, *Confined Spaces*.

  7.4.4. Ensure BCE performs facility grounding and lightning protection checks according to AFI 32-1065, *Grounding Systems*. Ensure work center facility managers and safety monitors perform physical/visual grounding and lightning protection inspections as part of PMIs and required site inspections.

  7.4.5. Ensure climbing training, certification and recertification procedures are accomplished according to **Attachment 9**.

7.5. Work Center Training Management. Qualified technicians are vital to properly maintain and restore mission systems. Effective work center training programs produce qualified technicians. Effective training programs are measured by the results produced, such as system or equipment operational rates, evaluation reports, work center task coverage, trainee upgrade rates, and the ability to implement policy changes and new technical procedures. Any C-E maintenance technician who is task qualified to

perform equipment maintenance and/or provides training on maintenance tasks, to include senior non-commissioned officers and DOD civilians, will maintain an AF Form 623 and will document training in IMDS.

7.5.1. To establish and maintain effective work center training programs, work center supervisors will:

7.5.1.1. Perform supervisory responsibilities listed in AFI 36-2201, Volume 1, *Training Development, Delivery, and Evaluation*, AFI 36-2201, Volume 2, *Air Force Training Program Training Management*, and AFI 36-2201, Volume 3, *On The Job Training Administration*.

7.5.1.2. Identify work center duty positions and each position's total task training requirements. Use an individual training plan form, or equivalent computer generated form, to list each duty position's total task training requirements. Identify on-call duty tasks (minimum qualifications necessary to be scheduled for independent on-call duties). There are several options concerning ways to organize work center duty positions:

7.5.1.2.1. Identify duty positions by system, equipment, subsystem, or major assembly. Determine which groupings constitute a duty position and assign personnel accordingly.

7.5.1.2.2. Identify duty positions by tasks. Select tasks from several systems, equipment, subsystems, or major assemblies, and tailor each duty position to the work center's needs.

7.5.1.2.3. Identify supervisory tasks. This combines technical tasks with tasks needed to supervise and manage a crew, team, or work center.

7.5.1.2.4. Use a combination of the above or other ways of organizing duty positions that are most effective for the work center.

7.5.1.3. Establish a work center MTP to ensure 100 percent task coverage. The MTP includes the Master Task List (MTL), applicable CFETP, AFJQSs, AFQTPs, local JQS tasks, management tasks, contingency and wartime tasks, and additional duties. See AFI 36-2201, Volume 3, for additional guidance.

7.5.1.4. Perform initial evaluations of newly assigned individuals according to AFI 36-2201, Volume 3. Technicians certified by another work center on tasks applicable to their new duty position must demonstrate proficiency on a sampling of those tasks.

7.5.1.5. Develop and update a training schedule for each trainee. Determine the most convenient and effective method to document, disseminate and monitor individual training schedules. Mission requirements and unforeseen situations affect schedule compliance; make every effort to meet scheduled training goals.

7.5.1.6. Ensure civilian personnel are trained according to applicable directives and the training principles according to AFI 36-2201, Volume 3. In addition, supervisors will:

7.5.1.6.1. Review the AF IMT 1378, **Civilian Personnel Position Description**, for the position the individual was hired to fill, prior to conducting the initial evaluation.

7.5.1.6.2. Brief civilian employees on task qualification requirements and provide necessary training.

7.5.1.6.3. Ensure civilians who are task qualified to perform equipment maintenance and/or provide training on maintenance tasks maintain an AF Form 623 and document training in IMDS.

7.5.1.6.4. Request and document formal training according to applicable directives.

7.5.1.7. Observe training sessions frequently to ensure the training is on schedule, meets the trainee's needs, and achieves work center training objectives.

7.5.1.8. Ensure the validity of task qualification and certification actions.

7.5.1.8.1. Technicians will not perform maintenance tasks they are not certified on unless directly supervised by a task certified technician. Inadequately trained technicians are more likely to commit errors that result in injury or loss of mission equipment. Supervisors must ensure trainees are qualified before certification.

7.5.1.8.2. Trainees must fully understand and believe they can perform the task safely and correctly before agreeing to task certification.

7.5.1.8.3. When individuals cannot perform a certified task during a CSEP personnel evaluation, the supervisor must immediately decertify the individual on that task and review related tasks to determine if additional decertification and training is required. Supervisors must understand evaluation decertification and recertification documentation procedures. Supervisors will:

7.5.1.8.3.1. Document unsatisfactory task performance on the individual's AF IMT 623a and decertify the failed tasks in IMDS.

7.5.1.8.3.2. Perform training recertification within 60 calendar days if still required for the duty position and document in IMDS.

7.5.1.8.3.3. Annotate completion of training and recertification in the individual's AF IMT 623a.

7.5.1.8.3.4. Notify QA of the recertification action, so QA can perform a special personnel evaluation according to paragraph **5.15.3.3.2.** Exception: individuals decertified during an ICBM personnel evaluation must be re-evaluated on the failed task. This must be accomplished before being allowed to perform the task unsupervised.

7.5.1.8.3.5. Refer to AFI 36-2201, Volume 3, for additional guidance.

7.5.1.8.4. Decertifications initiated by a work center supervisor, and not as a result of a CSEP personnel evaluation, do not require a CSEP special evaluation after recertification.

7.5.1.8.5. Cross-utilization training (CUT) across different career fields within an organization is permitted. CUT training and certification must be documented in individual training records. Qualified tasks are subject to CSEP evaluation.

7.5.1.8.6. **(Added-ANG)** In accordance with the intent of AFI 36-2201 2EXXX personnel possessing a 7-skill level and a minimum of 8 years of experience in their current AFSC (recommended in the grade of TSgt or above), may act as both trainer and certifier for a maximum of one individual during unique situations when another qualified certifier is not assigned. This will provide a short-term solution for a specific, unique, and infrequent situation and will not be used on a long-term basis. The newly certified technician will then be eligible to be the

certifier for additional personnel to meet future work center training requirements. The entire process will be documented on the trainee's AF Form 623a, *On-The-Job Training Record Continuation Sheet*, and filed in the individuals training record. The AF Form 623a entries will include a justification explaining why the action was required. Additionally, Quality Assurance will perform a special personnel evaluation on the newly certified technician before the individual is eligible to perform follow-on certifications.

7.5.1.9. Work closely with QA's Maintenance Training Management function to:

7.5.1.9.1. Identify formal training requirements.

7.5.1.9.2. Assess the impact of significant training difficulties on the work center's maintenance capability to include shortfalls in UTC-related training tasks.

7.5.1.9.3. Identify work center training capabilities that may be of use to other work centers.

7.5.1.10. Ensure when assigned to a UTC, the applicable AFJQSs and AFQTPs are mandatory for use.

7.5.1.11. Validate the applicable TTT training references.

7.6. Work Center Maintenance. Work center supervisors ensure work center maintenance is accomplished, controlled and reported in a timely manner.

7.6.1. Perform maintenance according to applicable system or equipment technical data and DISA circulars.

7.6.1.1. On-line, operational systems will not be used to test or verify serviceability of parts, such as supply point assets, without COM approval.

7.6.2. Submit AFTO IMT 22 when TO errors or inadequacies are found according to TO 00-5-1.

7.6.3. Draft LWCs or AFCEMIs when system or equipment PMIs are needed but not published according to TO 00-5-1 and command publications. Submit draft documents to QA for review, validation, coordination and further processing as appropriate for publication.

7.6.4. Maintain a file of TO "replaced pages" when it is necessary to maintain unmodified systems and equipment. Modifications frequently cause the need for changes (replacement of pages) to technical publications and inspection requirements. Keep replaced pages until the modification is completed on all systems and equipment. Destroy the replaced pages when all modification actions are completed.

7.6.5. Challenge existing repair restrictions and SMR codes when repair is within the capability of the shop or base, or when expendables can be economically repaired or reconditioned.

7.6.5.1. Use the procedures in TO 00-25-195 and paragraph **5.21.** in this instruction to prepare, process, and evaluate proposed repair code change submissions.

7.6.5.2. Use TO 00-20-3, repair estimating cost criteria, when preparing an SMR change request on expendable items.

7.6.6. Perform only authorized cannibalization actions according to this instruction and TO 00-20-2.

7.6.7. Perform only system, equipment, or circuit modifications or configuration changes authorized by TCTO, command modification directive, DISA direction, AFCEMI or programming documents, such as for EI projects.

7.6.8. Ensure effective and timely equipment corrosion prevention and control actions are taken according to TO 1-1-689, *Organizational, Unit, and Intermediate Maintenance, Avionics Cleaning, and Corrosion Prevention/Control*; TO 31Z-10-37, *General Engineering Technical Manual Corrosion Prevention and Protection*; and command regulations.

7.6.9. Ensure accurate and timely maintenance documentation submissions and error correction.

7.6.9.1. Review on a daily basis the data entered into IMDS according to TO 00-20-2. *NOTE:* JDD corrections are limited to the previous 10-day time period.

7.6.9.2. Appoint a work center MDC representative.

7.6.9.3. Perform weekly review of QBR to identify and resolve maintenance documentation errors. Forward errors and corrective actions to the IMDS focal point for trend analysis.

7.6.9.4. Meet with IMDS focal point monthly to review trends in maintenance documentation errors and establish corrective actions.

7.6.10. Provide the MOC with technician availability status and on-call schedules.

7.6.11. Advise the MOC, the maintenance supervisor, or the COM, of taskings beyond the work center's capacity or that cannot be completed within a reasonable time.

7.6.12. Provide work center quality assurance. Work closely with QA to improve the work center's management and maintenance programs.

7.6.12.1. Provide qualified maintenance personnel to perform technical tasks and safety duties during evaluations. When appropriate, the task evaluator may act as safety observer.

7.6.12.2. Nominate qualified and experienced personnel to act as work center QARs if required by the COM.

7.6.12.3. Coordinate with QA to reschedule CSEP evaluations that cannot be performed or completed.

7.6.12.4. Review all evaluation reports. Ensure timely action is taken to correct discrepancies, identify underlying causes, and take management action to prevent recurrence.

7.6.13. Ensure antenna systems are managed according to **Attachment 7**.

7.7. Work Center Control of Maintenance. Supervisors ensure that personnel, tools, equipment and supplies are available to meet maintenance requirements. Supervisors will:

7.7.1. Dispatch personnel, with the technical data and support items needed to troubleshoot, repair and restore systems in an expeditious manner.

7.7.2. Ensure that work center personnel comply with maintenance schedules and promptly respond to scheduled and unscheduled maintenance requirements.

7.7.2.1. In some cases, such as for critical command and control systems, the need for immediate response may require that the normal trouble reporting sequence be bypassed. Where the unit commander authorizes critical systems operators to notify the maintenance work center first and

the MOC second, technicians will provide the MOC with an initial status report as soon as the nature of the malfunction is verified.

7.7.2.2. Coordinate directly with other work centers, when necessary, to resolve outages after a JCN has been assigned by the MOC.

7.7.2.3. Notify the MOC if the responsibility to correct the problem needs to be transferred to another work center.

7.7.3. Review the C-E Equipment Inventory List and CA/CRL to ensure all work center resources are accurately reflected. Conduct the review annually. Notify the MOC when IMDS corrections or additions are necessary.

7.7.4. Assist the MOC with establishing the PMI schedule. Ensure all PMIs for assigned mission and support equipment are included in the schedule. Notify the MOC when corrections or additions are necessary.

7.7.5. Ensure ESR responsibilities referenced in paragraph 4.5. are completed when the MOC or QA cannot perform those functions.

7.7.6. Control and monitor maintenance not controlled by the MOC. On a weekly basis, review deferred jobs and reconcile supply status with Materiel Control.

7.7.7. Notify the MOC if work center controlled jobs change system or equipment status. The MOC assumes management of these jobs.

7.7.8. Perform in-process evaluations at stages of assembly of systems, subsystems, or components when further assembly would prevent evaluation for TO compliance. Supervisors specify in-process evaluation requirements.

7.8. Work Center Supply Management. Supervisors ensure cost effective maintenance support of the mission through the proper use and management of supply assets and support equipment. Supervisors will:

7.8.1. Establish turn-in or pickup points for XB3 items when authorized by the COM (see AFMAN 23-110 Volume 2, Part 2, Chapter 13).

7.8.2. Use IMDS to directly requisition parts whenever possible. Use the direct call-in method between the work center and demand processing when IMDS is not available. Use AF IMT 2005, **Issue/Turn-In Request,** AF Form 2413, **Supply Control Log**, or any other control register to document requests for direct demands on supply. Verify UND "A" and "B" requests prior to call-in.

7.8.3. Ensure repair cycle assets are properly managed.

7.8.3.1. Notify the DIFM monitor of status changes for assets kept in the work center.

7.8.3.2. Process repaired assets and perform prevalidation check for NRTS actions.

7.8.3.3. Process reparable property under warranty or guarantee according to TO 00-20-3, TO 00-35D-54 and AFMAN 23-110.

7.8.3.4. Submit maintenance TRNs according to TO 00-20-3.

7.8.3.5. Coordinate with Materiel Control to ensure RSP assets requiring functional checks are identified. Notify Materiel Control when functional checks are completed.

7.8.4. Submit deficiency reports or reports of discrepancy when deficient material is received according to TO 00-35D-54. ***NOTE:*** The organization can refuse the asset if the asset is physically damaged. See AFMAN 23-110, Volume 2, Part 2, Chapter 14 for guidance.

7.8.5. Monitor and control bench stock.

    7.8.5.1. Approve additions, deletions, and changes in bench stock levels.

    7.8.5.2. Ensure bench stock monitors are thoroughly familiar with bench stock management procedures. Monitors must attend the LRS training class on bench stock management.

    7.8.5.3. Perform semiannual bench stock reviews and certify the items and quantities shown are correct. ***NOTE:*** Commanders or the COM have the option to discontinue semiannual joint bench stock reviews with the concurrence of the LRS Commander.

7.8.6. Review applicable Allowance Standards (AS) to identify additions, deletions, and changes to work center support equipment authorizations. Perform AS review quarterly. Submit recommended changes according to AFMAN 23-110, Volume 2.

7.8.7. Ensure TCTO kits are correct and complete when received from the LRS.

7.8.8. Notify equipment custodians when TCTO actions result in equipment stock number changes and initiate AFTO IMT 22 as applicable.

7.8.9. Identify preplanned items, time change items, and TCTOs. Complete required actions when scheduled.

7.8.10. When authorized by the COM, establish and manage work order residue. Maintain a list of items on work order residue and develop procedures to encourage consumption of work order residue prior to using bench stock.

7.8.11. Develop written guidance to monitor and control shop/operating stocks according to AFI 23-111. For C-E's purpose, shop/operating stocks are those items purchased with Air Force funds to fulfill mission requirements (i.e., PMIs, equipment maintenance, work orders, etc.) that cannot be loaded on bench stock or work order residue accounts (i.e., GSA purchased cable stocks, connectors, hardware, etc).

    7.8.11.1. Maintain an inventory of frequently used items and update consumption monthly. Ensure items critical to deploying equipment are stocked, maintained and secure.

7.8.12. At bases with government-maintained telephone switches, ensure that the maximum number of administrative telephone instruments and associated equipment (i.e., key telephone units, power supplies, terminals, etc.) allowed for operating spares and unprogrammed growth does not exceed 8 percent of the total for each type of instrument and associated equipment in use and programmed for specific use. This stipulation does not apply to items that could normally be a bench stock or special level item.

7.8.13. Ensure the equipment custodian completes appropriate documentation when EI or self-help installation or removal projects are complete.

7.8.14. Ensure forward supply point assets are managed according to AFMAN 23-110.

7.9. Work Center Publications Management. Supervisors ensure required directives and technical publications are on hand and properly maintained according to AFI 21-303; AFI 33-360, Volume 1; AFI 33-360, Volume 2; and TO 00-5-1. Supervisors will:

7.9.1. Strictly enforce adherence to and compliance with TOs and supplements.

7.9.2. Ensure availability of required TOs and supplements in work centers.

7.9.3. Establish procedures for shipping TOs and supplements to support mobility requirements.

7.10. Work Center Facility, Systems Installation and Equipment Records. Supervisors ensure facility, systems installation and equipment records are current and available. Supervisors will:

7.10.1. Ensure applicable Communications and Information Systems Installation Records (CSIR) are current. The unit P&I processes CSIRs according to AFI 21-404, *Developing and Maintaining Communications and Information Systems Installation Records*. Coordinate with P&I to establish an annual review process.

7.10.2. Ensure an updated copy of facility record drawings needed for system troubleshooting is available in the work center or in an easily accessible central location within the maintenance complex.

7.10.3. Review Outside Plant drawings at a rate of at least 10 percent per calendar quarter according to TO 31W3-10-22, *Signal Manual—Telecommunications Engineering, Outside Plant, Telephone*. Annotate changes to all copies of affected drawings during the annual review or sooner if required.

7.10.4. Document BCE facility grounding and lightning protection checks in the facility or historical files.

7.10.5. Maintain system or equipment historical files, unless a centralized file is directed by the COM.

7.10.6. Use and maintain the IMDS TCTO history. Units using manual AFTO IMT 95, **Significant Historical Data**, print a copy of the TCTO history from the IMDS TCTO subsystem and attach it to the AFTO IMT 95, for equipment being turned in or transferred. Units using IMDS Automated History Entry (AHE) print a copy of the AHE record that accompanies equipment being turned in or transferred. *NOTE:* For units processing TCTOs under IMDS, TCTO history cannot be obtained on an item if an AHE record was not established.

7.10.7. Ensure applicable AFTO Form 47X-series checklists (if available), automated copies, or master COTS inventories accompany equipment items being turned-in to supply, transferred to another agency, or deployed. For COTS equipment (i.e., TDC, ICAP, etc.), units will develop master inventories based on shipping, acceptance, catalog and other applicable documents. Refer to TO 00-35D-2 for additional guidance.

7.11. Work Center Test, Measurement, and Diagnostic Equipment (TMDE) Management. Ensure work center TMDE management responsibilities are accomplished and that required TMDE, shop mock-ups and test fixtures are available and properly maintained.

7.11.1. Work center supervisors ensure compliance with user and organizational maintenance responsibilities and appoint a work center TMDE monitor to ensure TMDE is properly managed. Work center TMDE monitors perform a key role to ensure serviceable TMDE is available to work

center technicians when and where it is needed. Work center supervisors and work center TMDE monitors will:

7.11.1.1. Be familiar with TMDE management directives to include the following: AFI 21-113, *Air Force Metrology and Calibration (AFMETCAL) Program*, TO 00-20-14-CD-1, *Air Force Metrology and Calibration Program*, TO 33-1-27, *Logistics Support of Precision Measurement Equipment*, and TO 33K-1-100-CD-1, *TMDE Calibration Notes Maintenance Data Collection Codes, Cal Measurement Summaries Calibration Procedure, Calibration Interval and Work Unit Code Reference Manual*.

7.11.1.2. Initiate requisitions for new or replacement TMDE and monitor the status of TMDE requisitions. Request follow-up action if the EDD does not satisfy mission requirements.

7.11.1.3. Verify accuracy of data on the master ID list.

7.11.1.4. Perform and document scheduled user calibration actions.

7.11.1.5. Turn in work center TMDE for calibration according to the calibration schedule and local procedures.

7.11.1.6. Establish limited calibration requirements whenever possible. This eliminates time spent to calibrate unused functions or ranges and expedites return of the TMDE to the work center. However, before establishing limited calibration, consider the following:

7.11.1.6.1. Determine the functions and ranges needed for all mission systems and equipment supported by the TMDE in the work center. TMDE needs to be calibrated only for those functions and ranges used.

7.11.1.6.2. TMDE shared by two or more work centers must be calibrated for the ranges and tolerances required by each using work center.

7.11.1.7. Request priority calibration or repair, through the unit TMDE coordinator, only when justified to meet urgent mission requirements. Pick up the TMDE from PMEL as soon as the priority calibration is completed.

7.11.1.8. Request an extension of the calibration due date, through the unit TMDE coordinator, if loss of the TMDE will delay or prevent critical mission accomplishment.

7.11.1.9. Provide or arrange for training of work center personnel on proper use and care of TMDE, including how to determine calibration condition and limitations.

7.11.1.10. Advise the unit TMDE coordinator of problems with TMDE calibration or repair support.

7.11.1.11. Advise the work center project coordinator of problems in obtaining or calibrating TMDE needed to install or maintain mission systems scheduled for installation.

7.11.1.12. Notify the COM when the lack of TMDE impacts completion of the work center's mission.

7.11.2. Replacement of TMDE. Replacement TMDE may be required if PMEL is unable to repair an item of TMDE, or when an item is condemned or designated as obsolete. TO 33-1-27, Appendix II, lists obsolete or disposal TMDE items.

7.11.2.1. When new or replacement TMDE is required, work center TMDE monitors:

7.11.2.1.1. Determine if substitute items are acceptable.

7.11.2.1.2. Notify the unit TMDE coordinator when TMDE items are turned in to or received from supply.

7.11.2.1.3. Coordinate with the work center TO monitor to obtain applicable TOs for new TMDE and to dispose of TOs for TMDE which has been turned in.

7.11.3. Locally Procured TMDE. Determine the supporting PMELs ability to maintain and calibrate TMDE before making a local purchase. Refer to AFI 21-113 and TO 00-20-14-CD-1 for further guidance.

7.12. Work Center Tool Management. Work center supervisors will:

7.12.1. Ensure effective tool control and accountability.

7.12.2. Implement the tool management procedures according to paragraph **1.18.** and applicable maintenance operating instructions.

7.12.3. Appoint a CTK monitor.

7.13. Work Center Logistics Support. Supervisors ensure work center logistics support management responsibilities and work center project coordinator duties are accomplished. Supervisors ensure support requirements for new systems, programs, and plans are established. Supervisors must work closely with the COM and the unit P&I function to achieve this goal. Work centers must also assist in the preparation of the maintenance budget estimate. P&I is the focal point for these matters, while work centers provide the in-depth knowledge and technical expertise required for effective logistics planning.

7.13.1. Work center supervisors must understand all aspects of work center logistics support programs, and:

7.13.1.1. Appoint a work center project coordinator for each EI, contractor, or self-help project to ensure project coordinator duties are accomplished.

7.13.1.2. Assign one or more technicians to work with EI project and maintenance assistance teams. The COM may waive this requirement, on a case-by-case basis, however, assigned technicians receive valuable training from the team and can train other work center technicians after the team departs.

7.13.1.3. Work with P&I and the COM to resolve issues concerning manpower authorizations and allocations for the work center.

7.13.1.3.1. Review new work center extended unit manpower documents (UMD) when issued.

7.13.1.3.2. Help prepare work center manpower change requests.

7.13.1.3.3. Help prepare work center manpower standard applications or reapplication. Supervisor must be familiar with the work center's manpower standards.

7.13.1.4. Provide budget estimate inputs to the COM and monitor work center expenditures.

7.13.1.4.1. Develop annual budget estimates and amended estimates.

7.13.1.4.2. Review the D04, *Daily Document Register*, and D11, *Daily PFMR/OCCR Update and Reconciliation*, reports to monitor work center expenditures. Supervisor must be aware of what portion of the maintenance budget was programmed for their use and how much has been expended.

7.13.1.4.3. Include support for programmed systems and equipment in budget estimates.

7.13.1.5. Review support agreements to identify special support requirements to P&I when requested. Identify training, equipment, supply, vehicle, additional manpower, or other key elements required to provide the support.

7.13.1.6. Review those portions of Operations Plans (OPLAN), Programming Plans (PPLAN) and Program Action Directives (PAD) that task the work center.

7.13.1.6.1. Ensure the work center has the capability to execute the required tasks.

7.13.1.6.2. Identify to P&I any training, equipment, supply support, vehicle support, additional manpower, and other key elements required to execute the tasking.

7.13.2. Work Center Project Coordinators act as the work center focal point for all matters concerning the assigned project. Project coordinators ensure projects are accomplished with minimum difficulty and the work center can support systems or equipment programmed for installation or major modification. Project coordinators will:

7.13.2.1. Work closely with the unit P&I office, EI engineers and EI teams.

7.13.2.2. Participate in site surveys and provide technical advice to the EI team, work center supervisor, COM and the P&I office.

7.13.2.3. Coordinate with other work center project coordinators to identify and resolve conflicts (such as storage space, power requirements, or programmed equipment locations).

7.13.2.4. Provide continuity of logistics support preparations for the project.

7.13.2.5. Review EI project packages and amendments. Initiate engineering change requests with an AF IMT 1146, **Engineering Change Request/Authorization**, according to AFI 33-104, *Base Level Planning and Implementation (P&I)*, for necessary changes to the project for deficiencies noted in the project package. Identify changes and deficiencies before the installation begins, to ensure timely project completion and to prevent delays and work stoppages during installation. Use **Attachment 2** and AFMQCC 200-3 as a guide to conduct these reviews.

7.13.2.6. Identify to P&I all en-route, FTD, and other formal training required to support programmed systems and equipment.

7.13.2.7. Coordinate with the work center supervisor to obtain required technical data, TMDE, special tools, other support equipment, training, manpower and so forth.

7.13.2.8. Coordinate with the work center TMDE monitor to ensure calibration capability is established for new TMDE authorized for programmed systems and equipment.

7.13.2.9. Request technicians be appointed to work with the EI project team, monitor progress of the project, and participate in systems or equipment acceptance tests.

7.14. Work Center NRTS Verification Process.

7.14.1. The production work center supervisor is responsible for verifying proposed NRTS actions within their respective work center prior to QA validation. NRTS verification ensures assets are repaired on base when it is economically feasible and within existing capabilities. Work center supervisors must maintain close liaison with QA staff members and associated work center supervisors to minimize NRTS actions. The capability to repair or assist in the repair of communications systems may exist in other base activities or functions, and therefore must be considered as a repair source for proposed NRTS items.

7.14.2. Work center supervisors will:

7.14.2.1. Determine if a cost effective repair capability is available in other work centers, on base, or through local procurement prior to completing the NRTS action.

7.14.2.2. Inspect assets proposed for NRTS. Review accompanying MDC documents, supply documents, and condition tags or labels for accuracy before submitting to QA for validation.

7.14.2.3. Verify the SMR Code against the appropriate TO. Verify documents from the single manager, item manager, or MAJCOM staff when used to justify other NRTS actions.

7.14.2.4. Review proposed NRTS 9, Condemned, actions to ensure the asset's condition is beyond economical repair.

7.14.2.5. Determine and implement applicable managerial action to preclude future similar NRTS actions, if appropriate.

7.14.2.6. Record verification of the NRTS action on MDC documents and condition tags and forward the asset to QA for further processing.

7.15. Aerospace Expeditionary Forces (AEF) and Mobility Response Actions. Work center technicians may be called upon to act as equipment/UTC supervisors. The equipment/UTC supervisors will take the following predeployment actions when the unit receives a mission tasking order:

NOTE: Refer to **Chapter 8** for deployed maintenance management procedures.

7.15.1. Ensure all duties outlined for work center supervisors are performed and manage the deployable systems and equipment as outlined in this chapter.

7.15.2. Conduct or participate in predeployment inspections prior to deployment of equipment/UTCs. Predeployment inspections ensure systems and equipment are operational, problems from the previous deployments are corrected, the inventories are complete using AFTO Form 47X-series checklists (if available) or automated copies, and the systems and equipment are capable of meeting mission requirements. The minimum areas of coverage for predeployment inspections include:

7.15.2.1. Complete minimum essential checks as specified by the COM to ensure the system is operating within required parameters in accordance with associated technical data.

7.15.2.2. Ensure all safety items are on-hand and safety deficiencies are corrected.

7.15.2.3. Conduct corrosion prevention and control as required.

7.15.2.4. Ensure all mobility markings are up-to-date.

7.15.2.5. Ensure required support items (i.e., technical data, tools, TMDE, RSP, etc.) are available and in proper condition to support a sustained deployment.

7.15.2.6. Document predeployment inspections in IMDS as special inspections.

7.15.3. Conduct additional predeployment inspections if systems, equipment or facilities packaged as deployment-ready are unpacked for any reason. These inspections may be limited to the equipment or area that was disturbed by the unpacking/inspection/maintenance. Inspection results will be documented and attached to the original predeployment inspection.

7.15.4. Conduct postdeployment inspections to determine the operational status of assigned systems and the completeness of the equipment/UTC. They are also used to return the equipment/UTC to a mission-ready status.

7.15.4.1. Document the postdeployment inspection in IMDS as a special inspection.

7.15.5. Obtain approval in writing from the COM to waive preventive maintenance inspections below 56-day interval for equipment in a stored or inactive status. Additionally, ensure the procedures prescribed in TO 00-20-1 are adhered to.

Chapter 8

DEPLOYED MAINTENANCE MANAGEMENT

8.1. Introduction. This chapter addresses maintenance management policies for all units with a deployable communications mission. Regardless of the unit's organizational structure the principles of maintenance management shall be followed to ensure efficient and effective maintenance. Units with deployable missions will designate a deployed COM and support maintenance management functions. COMs managing maintenance functions structured by UTC shall ensure these functions adhere to the principles of a production work center (see **Chapter 7**). Units with deployable UTCs will perform maintenance management as prescribed in this instruction.

8.2. Scope. Maintenance management procedures in a deployed environment must be appropriately scaled to balance maintenance requirements against operational commitments. Managers at all levels must leverage opportunities to compensate for the inefficiencies of contingency operations. In-garrison maintenance and predeployment planning are critical to ensuring equipment and personnel readiness and availability when tasked for contingency operations. Deployed maintenance management focuses on delivering the required operational capabilities while limiting operational interruptions. The deployed COM is responsible for overall C-E maintenance management, while equipment/UTC supervisors are responsible for ensuring their maintenance personnel comply with established guidance.

8.3. Procedures. The unit COM will develop written guidance prior to the deployment that outlines how to plan, schedule, monitor, control, report, and provide support for equipment maintenance and circuit restoral actions on all local and subordinate units. All equipment supporting the deployed elements will be included in these plans.

8.3.1. The deployed COM will:

8.3.1.1. Ensure authorized unit weapons and ammunition are stored and issued according to DOD and Air Force directives.

8.3.1.2. Establish a 24-hour single point of contact for deployed equipment/UTCs and ensure they perform MOC duties. The single point of contact will:

8.3.1.2.1. Contact the Network Control Center (or equivalent function) to request IMDS connectivity.

8.3.1.2.2. Assign a JCN to each equipment/UTC for initial operational or system checks during setup. These JCNs may be issued upon arrival at the deployment site or prior to departure from home station to minimize disruption during initial setup at the deployed site. Deployed IMDS updates will be completed as soon as access is obtained.

8.3.1.2.3. Track milestones such as the maintenance-ready condition of equipment/UTCs, installation of telephone lines, and the setup or tear down of power generators, antennas, and signal cable runs.

8.3.1.2.4. Coordinate external maintenance support for equipment/UTCs with Host Nation Support activities (i.e., vehicle maintenance, civil engineering, etc.).

8.3.1.2.5. Ensure all systems subject to FAA flight inspection meet inspection requirements prior to being placed into service. AFMAN 11-225, *United States Standard Flight Inspection*

Manual, authorizes military commanders to authorize use of the systems without current flight inspections for military only. ***NOTE:*** All aircraft under contract with DOD are considered military aircraft.

8.3.1.3. Ensure ESR and maintenance data documentation is accomplished.

8.3.2. Materiel Control will function as organizational supply and provide mobility support. In addition to the requirements listed in **Chapter 6**, Materiel Control will:

8.3.2.1. Set up a supply and equipment account with the support base as identified in the tasking directive. This will include the identification of contact points, means of communication, and delivery destinations. Identify deployed or transferred assets to the support base. For long-term deployments, transfer assets to the support base account via Redistribution Order (RDO) loan procedures. Transfer of ANG assets, if unavoidable, will follow the guidance in DODD 1225.6, *Equipping the Reserve Forces*.

8.3.2.2. Ensure RSP storage availability, issue and turn-in procedures are followed, and establish procedures for RSP replenishment at deployed locations.

8.3.2.3. Maintain a "part number to National Stock Number (NSN)" cross-reference capability on all items contained in the RSP(s). FEDLOG is recommended.

8.3.2.4. Store, secure, and control the issue of rations on AF Form 1339, **Dining Hall Signature Record (Storage Safeguard)** and AF Form 79, **Cash Collection Record (Storage Safeguard)**. *NOTE:* If Materiel Control is not available, the deployed unit will control rations with AF Form 1339.

8.3.2.5. Close supply and equipment accounts with the support base upon termination of deployment.

8.3.3. QA personnel typically do not accompany equipment/UTCs during contingency operations. In most cases, managerial, personnel, and technical evaluations will not be required in the deployed environment. However, reconstitution and redeployment of equipment/UTCs demands the accomplishment of some evaluation principles. The deployed COM will ensure the following QA duties are performed:

8.3.3.1. Conduct or participate in site transfer inspections when relieving/replacing personnel at a deployed location. This will only be done if previously deployed equipment/UTCs will remain in place at the deployed location. Site transfer inspections ensure systems are operational, problems are identified, and equipment inventory is complete and capable of meeting mission requirements. Document site transfer inspections within 15 days after assuming maintenance responsibility. Maintain a copy of the inspection on site for a minimum of 12 months. The minimum areas of coverage for site transfer inspections include:

8.3.3.1.1. Accomplish minimum essential checks as specified by the COM to ensure the systems are operating within required parameters in accordance with associated technical data.

8.3.3.1.2. Ensure all safety items are on-hand and safety deficiencies identified.

8.3.3.1.3. Ensure all C-E facilities, shelters, work benches, and systems are grounded properly.

8.3.3.1.4. Ensure corrosion prevention and control has been conducted as required.

8.3.3.1.5. Ensure all mobility markings are up-to-date.

8.3.3.1.6. Ensure required support items (i.e., technical data, tools, TMDE, RSP, etc.) are available and in proper condition to support a sustained deployment.

8.3.3.1.7. Verify the master PMI schedule and ensure all PMIs are scheduled and performed.

8.3.3.1.8. Ensure all assets are accounted for and documented on applicable CA/CRL, mission critical systems and equipment listings, or other equipment accountability and inventory documents.

8.3.3.2. Personnel evaluations will only be performed if directed by the deployed COM or to evaluate 2EXXX personnel who are task certified to maintain ATCALS within the 12-month interval established in **Chapter 5**, paragraph **5.15.3.5.** The deployed COM will determine the personnel best suited to perform the evaluations. The evaluation report will be routed and closed within the deployed unit.

8.3.3.3. Technical evaluations will only be performed if directed by the deployed COM. The deployed COM will determine the evaluation areas, and can choose all, some or none of the evaluation items in paragraph **5.15.7.1.** The deployed COM will determine the personnel best suited to perform the evaluation. The evaluation report will be routed and closed within the deployed unit.

8.3.3.4. Managerial evaluations will only be performed if directed by the deployed COM. The deployed COM will determine the evaluation areas, and can choose all, some, or none of the evaluation items in paragraph **5.15.10.7.** The deployed COM will determine the personnel best suited to perform the evaluation. The evaluation report will be routed and closed within the deployed unit.

8.3.3.5. Perform air mobility and road mobility evaluations prior to redeployment of equipment/ UTCs to home station or alternate deployment location.

Chapter 9

**INTERCONTINENTAL BALLISTIC MISSILE (ICBM) COMMUNICATIONS CABLE
AFFAIRS**

9.1. Introduction. This chapter outlines Cable Affair (CA) responsibilities for C-E maintenance activities supporting ICBM Hardened Intersite Cable System (HICS) and Outside Cable Communications Plant (OCCP) functions. It provides procedures for the COM and Cable Affairs Officer (CAO) to administer the CA function. It reorganizes the "Crossing with Government Superior Easement Rights" subject area into the four areas. It also delegates the responsibility to maintain a 100 foot separation between HICS and new aerial transmission towers/poles to the CAO.

9.2. General. Each communications squadron supporting an ICBM mission has a CAO as the single point of contact for all actions affecting the HICS and the HICS Right-of-Way (ROW). The CA, managed by the CAO, is a staff function under the communications squadron's Mission Systems Flight. The CAO must be technically and professionally capable of acting as the HICS ROW advisor for the base.

9.3. Responsibilities.

9.3.1. Headquarters Air Force Space Command (HQ AFSPC/LCM). HQ AFSPC/LCM will:

9.3.1.1. Develop policy and procedures in support of CA functions throughout the ICBM fleet.

9.3.1.2. Validate CA funding and support requests (i.e., funding support, engineering package reviews, depot level maintenance support, etc.) and coordinate with appropriate agencies.

9.3.1.3. Review all recommended changes to this chapter and coordinate the changes with HQ USAF/ILCX.

9.3.2. Host unit BCE will:

9.3.2.1. Maintain HICS ROWs, including erosion repair.

9.3.2.2. Repair and replace ROW fences and gates.

9.3.2.3. Provide equipment and operators to support cable repair, modification, or relocation when these efforts are beyond the communication unit's capabilities.

9.3.2.4. Assists communication units during final inspection and acceptance of contract work.

9.3.2.5. Accomplish ROW vegetation control and clearance when necessary to facilitate cable repairs and ensure cable hardness.

9.3.3. Base Communications Units will:

9.3.3.1. Maintain HICS cables.

9.3.3.2. Appoint the Cable Affairs Officers (CAO) to:

9.3.3.2.1. Monitor all activities affecting the HICS ROW and hardness criteria (see paragraph **9.4.**).

9.3.3.2.2. Control all ROW maintenance (see paragraph **9.5.**).

9.3.3.2.3. Maintain and manage HICS Circuit Identification and Recording System (CIRS) and CSIRs according to TO 21M-LGM30F-2-20-1 (Sec III), *Hardened Intersite Cable System* and AFI 21-404. *NOTE:* Send updated cable route maps to OO-ALC/TIEDDS, 6038 Aspen Ave, Bldg. 1289 SW, Hill AFB, Utah 84506-5805.

9.4. Monitor Hardened Intersite Cable System (HICS) Right-of-Way (ROW) Activity.

9.4.1. CAOs will track all activities affecting the HICS ROW (such as highway or utility crossings, construction, earth moving, etc.) to ensure HICS hardness integrity is maintained. CAOs will also:

9.4.1.1. Notify the COM of ROW deficiencies affecting HICS hardness integrity that cannot be resolved in a timely manner.

9.4.1.2. Coordinate/conduct the HICS ROW surveillance program. This program is an important tool to gather information on the condition of the HICS ROW. The primary goal of the surveillance program is to identify and document erosion problems, HICS ROW gate and marker pole discrepancies, and encroachment problems.

9.4.1.2.1. ROW surveillance can be completed by either the drive-over or fly-over method. Coordinate with local helicopter unit for fly-over support.

9.4.1.2.2. Examine each flight area ROW at least every 2 years. For example, if F-flight was completed June 1994, it would be due again NLT June 1996.

9.4.1.2.3. Document and track surveillance program results. When possible, document any marker post discrepancies discovered during the examinations as well.

9.4.1.3. Maintain close contact with non-USAF personnel/agencies who cross or could cross, inundate, or otherwise affect the HICS ROW above or below the surface. *NOTE:* System of records notice F021 AFSPC A, Cable Affairs Personnel/Agency Records applies. As a minimum, these contacts include:

9.4.1.3.1. Landowners and tenants.

9.4.1.3.1.1. Highway/road departments (federal, state, and county).

9.4.1.3.1.2. Public and private utilities (power, telephone, pipeline, water, etc.).

9.4.1.3.1.3. Contractors.

9.4.1.3.1.4. Federal, state, and local farm agencies (Farm and Home Administration, Farm Bureau, county agents, soil conservation agencies, etc.).

9.4.1.3.1.5. Municipal offices.

9.4.1.3.1.6. Railroads.

9.4.1.4. Maintain a mailing list of personnel/agencies indicated above according to AFMAN 37-123 (will become AFMAN 33-363). Contact all personnel/agencies on the list by mail, at least every 2 years, to relay the following:

9.4.1.4.1. Comments emphasizing the adverse effect cable cuts have on the defense effort.

9.4.1.4.2. Requirements and procedures for requesting consent-to-cross over or under the HICS ROW.

9.4.1.4.3. The necessity of keeping CA advised of any planned construction or earth-moving activities along the HICS ROW.

9.4.1.4.4. A request for update information, such as additional names of tenants, changes in ownership, erosion problems, and known construction requirements. Use AF Form 3951, **Intercontinental Ballistic Missile Hardened Intersite Cable Right-of-Way Landowner/ Tenant Questionnaire** (or Office of Management and Budget Form 0701-0141, **Intercontinental Ballistic Missile Hardened Intersite Cable Right-of-Way Landowner/Tenant Questionnaire)** to gather public information. See AFI 33-324, *The Information Collections and Reports Management Program; Controlling Internal, Public, and Interagency Air Force Information Collections*, for more guidance on requesting information from the public.

9.4.1.5. Notify landowners or tenants in advance with details of any planned cable work on their property. In all cases where digging takes place, make every effort to contact the landowner.

9.4.1.6. Ensure all nonroutine maintenance of the ROW (i.e., erosion repair work, earth moving, cable lowering or relocation, etc.) is monitored and inspected.

9.5. Right-of-Way (ROW) Maintenance.

9.5.1. Deficiencies. The HICS ROW is USAF Real Property. Correction of deficiencies is a BCE responsibility. However, the CAO is the single point of contact for all ROW deficiencies and ensures corrective actions are implemented. The CAO will:

9.5.1.1. Inspect all ROW problems (erosion, access/gate discrepancies, etc.) and determine corrective actions according to TO 21M-LGM30F-2-20-1 and/or applicable drawings.

9.5.1.2. Coordinate with cable maintenance to either perform repairs or monitor BCE/contractor efforts as required.

9.5.1.3. Request BCE assistance, as required. If BCE cannot support the ROW repair with in-house resources, the CAO processes a BCE funded AF IMT 9, **Request for Purchase** for contract support. *NOTE:* At bases where the missile wing is a tenant, BCE funding/reimbursement for missile support actions is according to local support agreement. The CAO must submit annual requirements to BCE well in advance for funding and programming. When out-of-cycle funding is necessary, the request and justification must be submitted to BCE for joint resolution.

9.6. Right-of-Way (ROW) Projects.

9.6.1. The CAO provides annual funding requirements for ROW projects, excluding ROW (HICS) gate projects, requiring contract support to the communications unit budget officer. These fund requirements are included in the yearly financial plans, Program Element Code (PEC) 11323F, under Electronic Equipment and Inter/Intra Site Cable Maintenance Element of Expense Identification Code (EEIC) 56970 funds. Based on these estimates, HQ AFSPC/LCX allocates funds for specific projects as they occur. The expenses generated by reimbursable projects are paid from funds predeposited by the crossing agency in Deposit Fund Account 57F3875 (see reimbursements in paragraph **9.7.4.2.**).

9.6.2. The CAO coordinates unprogrammed project requirements with unit and base budget offices to immediately notify HQ AFSPC/LCM and HQ AFSPC/LCX. HQ AFSPC/LCX will fund validated projects on a case-by-case basis

9.6.3. The CAO requests depot level support in accordance with TO 00-25-107, *Maintenance Assistance*, when repair/project requirements are beyond base level capabilities.

9.7. Hardened Intersite Cable System (HICS) Right-of-Way ROW Crossings.

9.7.1. The CAO ensures the HICS is not endangered by ROW crossing or construction activity. Crossings divide into three distinct categories:

9.7.1.1. Crossings where the government has lesser easement rights (secondary or later).

9.7.1.2. Crossings where the government has superior easement rights (first or prior).

9.7.1.3. Crossings within the confines of a public ROW where the government was issued a license or permit for the cable installation.

9.7.2. Future Crossings: When notified of a future crossing, the CAO and base Staff Judge Advocate (SJA) must initially determine who has the superior easement. In all cases, the USAF must comply with the terms of the easement. When the question of superior easement determination cannot be resolved, the CAO forwards all supporting case documents to HQ AFSPC/LCM for resolution. At the same time, the CAO must obtain sufficient details from the crossing agency to determine what actions, if any, are necessary to protect the HICS. *NOTE:* When the CAO knows of other crossing agency plans to cross the ROW but has not been properly contacted, the CAO must take the initiative to contact that party. If the crossing agency refuses to submit the required request, the CAO must immediately advise HQ AFSPC/LCM and the base SJA of the potential legal problem.

9.7.3. Crossings without Government Superior Easement Rights (Lesser). Required actions depend on whether Hardened Intersite Cable (HIC) lowering or relocation is required due to the crossing activity.

9.7.3.1. If no cable lowering or relocating is required, the CAO:

9.7.3.1.1. Advises the crossing agency that:

9.7.3.1.1.1. The CAO must be notified 72 hours before work begins.

9.7.3.1.1.2. Crossing work must be restricted to coordinated locations.

9.7.3.1.1.3. Intentionally severing the HICS is a criminal offense and could result in legal actions according to United States Code.

9.7.3.1.1.4. Repair costs for negligent severing or damage to the HICS will be billed to the crossing agency.

9.7.3.1.2. Schedules cable teams to locate and stake the cable in the crossing area and monitor the crossing work. Always attempt to place the cable team on-site to satisfy the time and date requirements of the crossing agency.

9.7.3.2. Cable lowering or relocating must be accomplished by USAF resources (in-house or contracted agent) at government expense. Under no circumstances will the crossing agency lower or relocate the cable. The CAO coordinates and oversees the effort. If the communications unit lacks resources to perform the work, the CAO seeks assistance in the following order:

9.7.3.2.1. To the maximum extent possible, BCE resources will be used for ROW work. The CAO must coordinate with BCE for specific equipment, operator, and time requirements

9.7.3.2.2. Contract support with EEIC 56970 Funds. The CAO arranges for the lease or rental of equipment and operators as required. ***NOTE:*** Contact cable maintenance for assistance as required.

9.7.4. Crossings with Government Superior Easement Rights. Before the USAF permits any agency to cross the HICS, that agency must ask for consent-to-cross. The agency must agree to the reimbursement procedures, when applicable, before the crossing can begin. CAOs can grant conditional crossing consents if no problems are encountered and crossing restrictions are observed. ***NOTE:*** Following conditional consent refer to paragraph **9.7.4.3.** for permanent consent procedures. Consent-to-cross notification, reimbursement, issuance, and follow-on procedures are outlined below:

9.7.4.1. Notification. The CAO must advise the crossing agency, by letter, of the following:

9.7.4.1.1. They cannot cross the ROW where the USAF has the superior easement except in a manner not involving physical or electronic interference with the HIC.

9.7.4.1.2. They must provide details of their planned activity so the CAO can determine whether HIC lowering or relocation is required.

9.7.4.1.3. Any requirement to relocate the cable to preclude interference from crossing agency's crossings will be done by the USAF at the crossing agency's expense. Include reimbursement procedures in the letter.

9.7.4.2. Reimbursement. Where the USAF has superior easement rights and must lower or relocate the HICS cable due to the crossing agency's activity, the crossing agency must reimburse the USAF. In these cases, the reimbursement procedures in AFI 65-601, Volume 1, *Budget Guidance and Procedures*, apply. The CAO:

9.7.4.2.1. Provides reimbursement details to the crossing agency explaining they must predeposit sufficient funds to cover the cost, payable to the local Defense Accounting Office (DAO), deposit fund account 57F3875. Also, advises the party that they must pay any claims filed as a result of activity associated with the crossing. ***NOTE:*** 56970 funds will not be used to defray prepaid USAF expenses incurred where the USAF has superior easement rights. Only funds deposited in account 57F3875 will be used.

9.7.4.2.2. Provides a cost estimate to the crossing agency, with at least the following cost breakouts:

9.7.4.2.2.1. Military man-hours (by grade).

9.7.4.2.2.2. Civilian man-hours (by grade).

9.7.4.2.2.3. Material required (standard cost).

9.7.4.2.2.4. Commercial equipment required (number of hours, type).

9.7.4.2.2.5. Travel.

9.7.4.2.2.6. Engineering.

9.7.4.2.2.7. Other (with description).

9.7.4.2.3. Ensures the cost estimate letter clearly states that the crossing agency must provide additional predeposits if actual expenditures exceed the estimate. Predeposit must be made before work commences.

9.7.4.3. Issuance. When the crossing agency has requested consent-to-cross and has agreed to the reimbursement procedures, the CAO notifies the BCE real estate office by letter. The letter must identify the specific easements involved and request the BCE real estate office issue a consent-to-cross to the crossing agency with at least the following provisions stated:

9.7.4.3.1. Crossing criteria.

9.7.4.3.2. Reimbursement details, as provided by CAO (when applicable).

9.7.4.3.3. A statement that any USAF work (lowering or relocation) must be complete before the crossing agency crosses the easement.

9.7.4.3.4. The requirement for the crossing agency to notify the CAO at least 48 hours in advance of their crossing.

9.7.4.3.5. Liability for damages.

9.7.4.3.6. If the USAF relocates the cable, the crossing agency must purchase, in the name of the USAF, any additional ROW needed. At no time will the USAF relinquish its superior easement rights to facilitate highway or utility construction. Purchase of additional ROW in the name of the USAF must include the necessary environmental analyses required by AFI 32-7061, *The Environmental Impact Analysis Process*, and environmental baseline studies required by AFI 32-9003, *Granting Temporary Use of Air Force Real Property*.

9.7.4.4. Follow-on Actions. Record day-to-day expenditures associated with the project. Coordinate with base DAO to ensure funds are available for project completion. In no case may expenditures continue prior to availability of funds to cover the expenses.

9.7.4.4.1. Forward requests for additional predeposits, as necessary, to the crossing agency with an information copy to the base DAO.

9.7.4.4.2. Compute the total project cost after completion. The final cost accounting must substantiate the transfer of funds from deposit fund account 57F3875 to reimburse the following appropriations:

9.7.4.4.2.1. General Accounting and Finance in accordance with DOD 7000.14-R, Volume 1, *General Financial Management Information, Systems and Requirements,* April 2001.

9.7.4.4.2.2. Civilian Pay in accordance with DOD 7000.14-R, Volume 8, *Civilian Pay Policy and Procedures*, February 2002.

9.7.4.4.2.3. Material consumed - standard cost.

9.7.4.4.2.4. Commercial equipment used charged as billed.

9.7.4.4.2.5. Travel costs.

9.7.4.4.3. Forward a copy of the final computation to the base DAO for final resolution of the predeposit fund. Also send a copy to the crossing agency.

9.7.4.4.4. Retain a copy of the final reimbursement computation and all supporting documentation. Obtain copies of collection and disbursement documentation from the base DAO. *NOTE:* Process reimbursements in a similar manner if the crossing agency is another Govern-

ment agency other than USAF. In this case, reimbursable expenses are limited to civilian pay, material, travel, and contractual services.

9.8. Right-of-Way (ROW) Procurement.

9.8.1. The CAO submits requests to the BCE real estate office to acquire additional ROW.

9.8.2. These requests contain legal descriptions, maps, and information on the real estate required and the date the CAO must receive notification of the new ROW acquisition. *NOTE:* Purchase of additional ROW must include the necessary environmental analyses required by AFI 32-7061 and environmental baseline studies required by AFI 32-9003.

9.9. Claims.

9.9.1. When a damage claim is anticipated, the CAO provides the SJA details of possible damage to private property caused by USAF personnel and/or contractors performing USAF related duties on or off the HICS ROW.

9.9.2. Take color photographs of evidence and provide them to the base SJA when possible. The CAO advises/assists the SJA as required.

9.10. Project/Case Files.

9.10.1. The CAO establishes project/case files to maintain any actions, documents, and photographs pertaining to all HICS crossings, projects, or ROW problems.

9.10.2. Maintain copies of all reimbursement billing documents for future reference should auditing or legal actions occur. Refer to AFMAN 37-123 and the Air Force Web-RIMS RDS located at **https://webrims.amc.af.mil/rds/index.cfm**.

9.11. HICS Construction and Siting Criteria.

9.11.1. HICS construction and siting requirements are found in TO 21M-LGM30F-2-20-1. General construction and siting information for projects affecting the HICS follows. In all cases, the most practical and economic solution will be sought consistent with HICS hardness criteria.

9.11.2. Construction Guidelines.

9.11.2.1. For all construction projects, the location of the HICS must be positively identified before work commences.

9.11.2.2. Decisions to reroute, relocate, or splice in additional HICS should be made only as a last resort.

9.11.2.3. When HICS relocating or lowering is unavoidable to maintain separation criteria, 4 inches of select backfill must surround the HIC. Refer to TO 21M-LGM30F-2-20-1 for further protection requirements.

9.11.2.4. Blasting activities are permissible provided that the HICS is not at risk of sustaining physical damage. Consult TO 21M-LGM30F-2-20-1 for specific criteria.

9.11.3. Siting Criteria.

9.11.3.1. New utilities should be installed at a 90-degree crossing angle when possible.

9.11.3.2. Construction permits should not be issued for crossings within 50 feet of HICS splice locations.

9.11.3.3. Communications cables must have a minimum separation of 12 inches from the HICS. The minimum crossing angle is 30 degrees

9.11.3.4. Pipelines must have a minimum separation of 12 inches from the HICS. Although the crossing angle is not critical, a minimum angle of 30 degrees is desirable to lessen the possibility of damaging the HICS during the crossing.

9.11.3.5. Power cables must have a minimum separation of 18 inches from the HICS. The minimum crossing angle is 30 degrees. Underground power cables with a potential difference of 2400 volts to ground must have a metallic sheath.

9.11.3.6. Highway and railroad crossing criteria are stated in applicable drawings. When more practical to leave the HICS in place, waivers of this criteria must be granted by HQ AFSPC/LCO.

9.11.3.7. Installation of aerial transmission line towers or poles shall not be within 100 feet of the HICS, if possible. The separation, required to avoid HICS damage during tower/pole installation, may be waived at the discretion of the CAO. The electrical effect of 60 hertz power transmission lines crossing parallel or nearly parallel to the HICS is negligible.

9.11.3.8. Dam and pond construction over the HICS will be avoided whenever possible. When unavoidable, the CAO must ensure no HICS splices remain in inundated areas.

Chapter 10

LOGISTICS SUPPORT

10.1. Introduction. This chapter provides logistics life cycle management procedures for communications systems and equipment. It is intended to assist and direct managers in a systematic approach to resolving communications systems and equipment sustainability problems and making critical logistics decisions. The chapter provides framework and elements to establish sustainability processes for communications systems and equipment support. AFI 10-602 provides terms, definitions, methods, and measures to determine reliability, maintainability, deployability, availability, sustainability and other parameters which contribute to increased mission capability and supportability. AFI 33-101, *Communications and Information Management Guidance and Responsibilities*, provides management procedures to ensure availability, interoperability, and maintainability of communications and information systems in support of mission readiness and war fighting capability. Refer to **Attachment 8** to identify the minimum maintenance management requirements for systems and equipment.

10.2. Air Force Materiel Command (AFMC) Single Manager (SM) and Non-AFMC SM Supported Equipment. SM supported equipment is centrally managed by a System Program Office (SPO) according to AFI 63-107, *Integrated Product Support Planning and Assessment*.   The SM is responsible for the equipment's logistics life cycle management and Operational Safety, Suitability, and Effectiveness (OSS&E) according to AFI 63-1201, *Assurance of Operational Safety, Suitability, and Effectiveness*. Under the SM, the support can be provided by an ALC or contractor logistics support. In contrast, non-AFMC SM supported equipment (e.g., command supported) is not centrally managed by an AFMC SM. For this type of equipment, the procuring activity (i.e., MAJCOM, unit, etc.) is responsible for all life cycle sustainment planning and OSS&E. Effective logistics life cycle management for both AFMC SM and non-AFMC SM supported equipment is essential to meet mission requirements. *NOTE:* For systems and equipment operated/used by more than one MAJCOM, DRU, or FOA, refer to AFI 10-901, *Lead Operating Command--Communications and Information Systems Management*, for lead command and using command responsibilities.

10.3. Major Command (MAJCOM) Responsibilities. MAJCOMs must ensure adequate logistics support is available for sustained operations for MAJCOM acquired COTS systems and equipment. MAJCOMs will:

10.3.1. Plan for logistics support for systems and equipment during the acquisition process.

10.3.2. Plan and budget appropriately for the logistics support elements through all phases of the system or equipment life cycle.

10.3.3. Develop a logistics support plan based on the logistics support elements (see paragraph **10.5.**).

10.3.4. Ensure units are aware of logistics support requirements.

10.3.5. Develop minimum procedures necessary to procure equipment and systems.

10.3.6. Provide guidance and support for equipment concerning system analysis, reliability, availability and maintainability programs.

10.3.7. Perform trend analysis and conduct special studies, when determined necessary, to identify adverse equipment performance and provide feedback to units.

10.4. Unit Responsibilities. Units must ensure logistics support is available for sustained operations for unit acquired COTS systems and equipment. Units will:

10.4.1. Plan for logistics support for systems and equipment during the acquisition process.

10.4.2. Plan and budget appropriately for the logistics support elements through all phases of the system or equipment life cycle.

10.4.3. Develop a logistics support plan based on the logistics support elements for unit acquired COTS systems and equipment (see paragraph **10.5.**).

10.4.4. Take prompt action to resolve logistics support problems and request assistance through appropriate channels when necessary.

10.5. Logistics Support Elements. MAJCOMs and units will develop a support strategy for MAJCOM-acquired and unit-acquired COTS systems and equipment. The support strategy includes the basic logistics support elements for life cycle and sustainment planning. Whether purchased for Air Force, MAJCOM or local use, all communications systems and equipment will have some type of logistics support plan. There must be asset accountability, maintenance and supply support, and analysis capability through Air Force data systems. Considerations must be made for identification of any support equipment, training and technical data. Managers must consider the following logistics support elements as a minimum to help manage, control and sustain communications systems and equipment:

10.5.1. Design interface. Design interface determines the inherent supportability of the mission equipment. It consolidates the relationship of logistics related design parameters to readiness and support resource requirements. These parameters are expressed in operational terms rather than inherent values and specifically relate to system readiness objectives and system support costs. The design interface directly impacts the system design (e.g., reliability and maintainability, efficient energy use, standardization and interoperability, transportability, ease of operation and maintenance by people, safety, and corrosion prevention).

10.5.2. Maintenance Planning: Effective maintenance planning addresses a variety of maintenance concept considerations that include maintenance responsibility, system design, long term operations and support costs. Maintenance planning will address the types of facilities, manpower, test equipment, TOs, level of repair, and spare parts needed. Additionally, planning will specify the requirements for collection of inventory, status, reliability, and maintainability data fed to the appropriate Air Force standard automated information systems (e.g., IMDS and REMIS).

10.5.3. Support Equipment. Support equipment is all equipment required to support the operation and maintenance of the system. This includes multi-use end items, Automated Test Sets (ATS), ground handling and maintenance equipment, tools, metrology and calibration equipment, and test equipment. ATS include automatic test equipment hardware and operating system software, test program sets that include the interface test adapter hardware and software programs to test individual weapon electronic items, and the associated software development environments and interfaces. Administrative small computer system components (i.e., desktops, laptops, routers, etc.) are considered Information Technology (IT) assets and are accounted for in the Information Technology Asset Management System (ITAMS) module of the Air Force Equipment Management System (AFEMS). IT assets embedded in weapon systems are managed according to the requirements of the system and accounted for in AFEMS, but not within the ITAMS module. See AFI 33-112, *Computer Systems*

Management (will become Air Force Information Technology (IT) Asset Management), for additional guidance.

10.5.4. Supply Support. When procuring non-AFMC SM supported COTS equipment, supply support includes planning and developing a spare and repair parts support plan, determining initial requirements, acquisition planning, distribution, and replenishment of inventory spares to include consumables. The LDL process is the method that the MAJCOMs and bases use to establish Adjusted Stock Levels (ASL) on Non-Airborne reparable items managed by AFMC. The LDL process is outlined in AFMAN 23-110, Volume 2, Part 2, Chapter 19, Section B and Volume 1, Part 1, Chapter 12, Section F. When procuring non-AFMC SM supported COTS equipment, analyze life-cycle support requirements of the new system/equipment to ensure support throughout the expected life cycle. This analysis should identify support items associated with the system/equipment that presents potential problems due to inadequate sources of supply, support capability or modification after shutdown of production lines. It should also identify alternative solutions for anticipated support difficulties during the remaining life of the system/equipment.

10.5.4.1. Procured non-AFMC SM supported COTS systems and equipment must have a logistics support plan (LSP) identifying methods for sustaining the system (e.g., life cycle management). The LSP will address the following supply support matters:

10.5.4.1.1. Procedures to acquire parts from the contractor.

10.5.4.1.2. Deployable requirements for the system and any necessary parts kits to sustain operations.

10.5.4.1.3. Replenishment and movement of parts between deployed location and contractor.

10.5.4.1.4. Storage and security of spare parts, kits, and equipment.

10.5.4.1.5. Transfer of system, parts, and kits to another activity (include funding responsibilities).

10.5.4.1.6. Disposal of system, spares, and equipment.

10.5.4.1.7. Determine method to track and manage system to account for parts/inventory.

10.5.5. Package, Handling, Storage and Transportation (PHS&T). Ensure PHS&T requirements are considered in the initial planning cycle, as well as part of the test and evaluation plan. PHS&T planning factors should include: intended use of the item, anticipated environmental conditions, type and mode of shipments, proper delivery addresses, criticality and fragility of the item, hazardous characteristics, weight and cube, and intended storage conditions and length of storage.

10.5.6. Technical Data. Evaluate data provided to determine if equipment can be maintained using existing commercial drawings, flowcharts, and handouts. Consider the overall support philosophy for equipment and systems. Remember to keep the big picture prospective to enable utilization between multiple users and commands. If possible, ensure electronic media is used to facilitate incorporation into the Air Force systems of records. Where possible, provide maintenance personnel preliminary data for review before procurement of equipment or system.

10.5.7. Facilities. Identify permanent, semipermanent, or temporary real property assets required to support the system, including conducting studies to define facilities or facility improvements, locations, space needs, utilities, environmental requirements, real estate requirements, and equipment. Facility support construction also includes internal facilities, such as raceways, ducts, conduits, elec-

trical wiring, outlets, building utilities, including heat, ventilation, and air conditioning. Plan for physical security requirements. See Air Force Handbook (AFH) 32-1084, *Facility Requirements*, and AFPD 32-90, *Real Property Management*.

10.5.8. Manpower and Personnel. Manpower is the manning authorization and personnel are the people with the appropriate grade and skill levels. Identify military and civilian personnel requirements with the skill and grade levels needed to operate, maintain and support the system/equipment over its lifetime. Consider in-garrison and contingency requirements.

10.5.9. Training and Training Support. Identify processes, procedures, techniques, training devices, and equipment used to train civilian, active duty, and reserve military personnel to operate and/or maintain the equipment/system. Determine how to perform or accomplish user training (i.e., training teams, computer-based, train-the-trainer, etc). When programs/systems cross command lines, emphasize the need to establish a multi-command training and planning team and prepare a life cycle training development plan according to AFI 36-2201, Volume 1. Provide a breakdown of the anticipated costs of the training. This cost breakdown should include training start-up costs and recurring training costs.

10.5.10. Computer Resources Support. Identify who procures the hardware and connectivity (e.g., centralized procurement, program office, MAJCOMs or local procurement). If this system is to co-exist with the current Local Area Network/Metropolitan Area Network/Wide Area Network infrastructure, state who is responsible for the hardware and if there will be an established demarcation point where support will end and begin. Ensure a certification of networthiness has been acquired for system integration. Identify any plans for changes to the hardware configurations based on planned upgrades or technological changes. Ensure appropriate system records are established.

Chapter 11

**AIR TRAFFIC CONTROL AND LANDING SYSTEMS (ATCALS) CERTIFICATION
REQUIREMENTS**

11.1. Introduction. ATCALS certification is the determination and validation that a system, subsystem, or service is operating within the established baseline or acceptable technical parameters critical to flight safety. Certification includes an independent determination, which ascertains the quality of advertised services, and a validation, which officially confirms and documents the determination on required forms. This chapter prescribes procedures and guidelines to ensure safe, reliable ATCALS facility and equipment performance. The COM ensures technicians comply with the provisions and intent of this instruction. The COM coordinates actions (impacting operations) required by this instruction with the local AOF Commander or equivalent level of authority. See **Figure 11.1.** for a ATCALS certification flowchart. *NOTE:* Adopted and prescribed forms for ATCALS certification are listed in **Attachment 16**.

11.2. Reference Data Collection. Each ATCALS facility will have only one set of references. References will be collected only when the system is optimized and are typically collected once. A Commissioning Flight Inspection, ATCALS Evaluation or Special (Reference) Flight Inspection and associated recorded reference data will constitute the facility references. Meteorological Navigation and Radar may establish a Special Maintenance Team baseline if the ATCALS Evaluation Report is not available. The facility will be maintained and adjusted to these established references thereafter.

11.3. Periodic Flight Inspection. Periodic flight inspections are performed to ensure ATCALS facilities are operating within flight inspection tolerances. Data collection is not required following a periodic flight inspection. Periodic Flight Inspection results may indicate maintenance actions are needed to return facility to established Facility References.

11.3.1. METNAV certifier will be present during all periodic (with monitors) flight inspections for NAVAIDS equipment. If the facility is current on certification requirements and successfully passes flight inspection, no further certification is required. Annotate flight inspection and results on AFTO Form 499, **ATCALS Certification Worksheet**.

11.3.1. **(ANG)** If the Meteorological Equipment and Navigational Aids (METNAV) certifier makes adjustments during a periodic flight inspection preventing the facility from being returned to previously established references, a complete annual certification is required. Electronically submit ATCALS certification forms to the ANG FAM for analysis. ANG FAM will determine if further adjustments are necessary, on-site assistance is required, a new ATCALS evaluation is required or if the newly recoded data will be used as the facility reference.

11.3.2. **(Added-ANG)** An ATC Radar certifier will be present during all periodic flight inspections. If the facility is current on certification requirements and successfully passes the periodic flight inspection, further certification action is not required.

11.3.3. **(Added-ANG)** Periodic flight inspections will be annotated on the AFTO Form 499, *ATCALS Certification Worksheet*. Comments will include type of inspection and any problems encountered. The new flight inspection report will be compared to the reference report and analyzed to ensure there is no degradation from the reference inspection. Deviations from earlier reports may indicate mainte-

nance is warranted even though the system successfully passed flight inspection. Contact the ANG FAM for assistance in determining and explaining anomalies.

11.4. Facility/Equipment Certification. Certification is the act of validating current facility/equipment performance based on comparison with facility/equipment reference data. Results may indicate maintenance actions are needed to return the facility to established facility/equipment references. All certifications require signature of authorized certifier on the applicable certification worksheet. Add additional comments on the certification worksheet when required. Refer to **Attachment 16** for a list of applicable ATCALS certification forms.

11.5. Certifiable System.

11.5.1. The following guidelines will be used to determine if certification is required. Certification is required if the equipment is part of the National Airspace System (NAS), is part of a host nation agreement, or as directed by a technical order and provides:

11.5.1. **(ANG)** All NAVAIDS and ATC radars will be certified.

11.5.1.1. Moment-by-moment positional information to pilots or air traffic control personnel during aircraft operations.

11.5.1.2. DELETED.

11.5.1.3. Decision support information that could affect aircraft heading, altitude, routing, control, or conflict awareness.

11.5.1.4. DELETED.

11.5.2. DELETED.

11.5.2.1. DELETED.

11.5.2.2. DELETED.

11.5.2.3. DELETED.

11.6. Remote Certification.

11.6.1. Remote certification is certifying a system without being on-site. Systems and services may be certified via remote maintenance monitoring (RMM) when the capability to remotely verify system certification parameters is available.

11.6.2. MAJCOMs may approve an authorized certifier to perform repair/adjust certification on a system by obtaining data electronically (i.e., fax, E-mail, etc.).

11.6.2. **(ANG)** Contact the ANG FAM for remote certification approval of any kind. Mail to: **ang.a6a@ngb.ang.af.mil** or call DSN 327-2167.

11.6.3. If MAJCOMs approve remote certification, the certifier will:

11.6.3.1. Discuss steps taken and results obtained with on-site maintenance personnel.

11.6.3.2. Fax the completed AFTO Form 499 and the certifier's certification appointment letter to the unit for inclusion in the facility record.

11.7. Unusable Air Traffic Control and Landing Systems (ATCALS) Facilities/Equipment. Whenever equipment performance deteriorates to a point where the system is no longer capable of providing the required service, or lapses certification, the condition will be immediately reported to the COM, who will coordinate with the senior ATC supervisor or the using agency. Determination to shut down the facility/ equipment must be made by ATC or the using agency. If the decision is made to continue using the system, document equipment condition, user name and title on the applicable ATCALS Facility/Equipment Certification Worksheet. The COM will up-channel information as required to ensure all parties are aware of impacts and flight safety concerns.

11.8. Certification Requirements.

11.8.1. Annual. ATCALS facilities/equipment identified as requiring certification will be certified annually. It is recommended that the annual certification be scheduled to coincide with the 336-day preventive maintenance inspection. The maximum interval between two consecutive annual certifications on a system is 365 days. If the certification cannot be conducted prior to the lapse of the maximum interval, the system must be considered unusable until the annual certification can be accomplished. Notify using organization to determine if equipment will be taken out of operation.

11.8.1. **(ANG)** Take the actions required to return system to reference levels. Once readings are returned to the reference, annotate the actions taken on the AFTO Form 499 to complete the certification process. If readings cannot be returned to the reference, contact the ANG FAM. Once annual certification is performed and documented, retain previous year's data in historical records for trend analysis.

11.8.2. Facility repair/adjustment. All ATCALS facilities/equipment will be certified after repairs or adjustments to any subassembly (e.g., transmitters, monitors, antenna systems and RF cables), which affects certifiable parameters (see applicable AFTO Forms). Certification is accomplished by comparing affected readings to the Facility/Equipment Reference Data. If the facility/equipment cannot be returned to established references, the work center supervisor, in concert with appropriate unit and MAJCOM representative(s), will determine follow on actions required to restore the equipment.

11.8.2. **(ANG)** Record readings for affected parameters on applicable forms and attach to the AF Form 499. Annotate all actions taken on the AFTO Form 499. If the facility cannot be returned to previously established references, a complete annual certification is required. Forward existing facility reference data, newly recorded data and most recent flight inspection report to the ANG FAM. ANG FAM will determine if further adjustments are necessary, on-site assistance is required, a new ATCALS evaluation is required, or if the newly recorded data will be used as the facility reference.

11.8.3. Special. Certification will be performed after an air traffic incident/complaint, Flight Inspection discrepancy, significant change to airfield environment, (i.e., construction, snowfall, etc.). Certification is accomplished by comparing appropriate readings to the Facility Reference Data. Results may indicate actions are needed to return the facility to established facility references.

11.9. Certification Authority.

11.9.1. Unit Commanders will designate, in writing, technicians authorized to perform facility and equipment certifications. Appointment letter will specifically define the system or systems each individual may certify. As the act of certifying ATCALS equipment is an inherently governmental function, as a minimum, unit appointed certifiers must meet the following criteria:

11.9.1.1. Certifiers must be government employees (i.e., DOD employee, military member, FAA technician, etc.) according to AFI 13-204, *Functional Management of Airfield Operations*.

11.9.1.2. Certifiers must be task qualified to perform all facility/equipment certifiable tasks as identified in the CFETP/AFJQS for the systems they are granted certification authority. Certifiers must maintain training records regardless of rank.

11.9.2. SMTs may be authorized by the MAJCOM to perform Facility/Equipment Certification if a unit does not have a qualified certifier. A certification appointment letter, signed by the MAJCOM approval authority, must be included in the facility/equipment record. Refer to **Attachment 5** for SMT management procedures.

11.9.2.1. **(Added-ANG)** SMT certification of ANG equipment/facilities may be allowed on a case by case basis. ANG FAM is the approval authority for SMTs to certify ANG equipment/facilities.

11.9.3. AFETS may be authorized by the MAJCOM to perform Facility/Equipment Certification if a unit does not have a qualified certifier. A certification appointment letter, signed by the MAJCOM approval authority, must be included in the facility/equipment record. Refer to AFI 21-110 for AFETS management procedures.

11.9.3.1. **(Added-ANG)** AFETS certification of ANG equipment/facilities may be allowed on a case by case basis. ANG FAM is the approval authority for AFETS to certify ANG equipment/facilities.

11.9.4. HQ Air Force Flight Standards Agency (AFFSA) ATCALS evaluation personnel may be authorized to perform Facility/Equipment Certification if a unit does not have a qualified certifier. A certification appointment letter, signed by the AFFSA Commander, must be included in the facility/equipment record. Refer to Air Force Mission Directive (AFMD) 27, *Headquarters Air Force Flight Standards Agency (AFFSA)*, for AFFSA responsibilities.

11.10. Certification of Navigational Aids (NAVAIDS) Equipment.

11.10.1. Accomplish certification of navigational aids equipment according to paragraph **11.8.** using applicable TO procedures. Document the current equipment performance readings and compare to reference data. Evaluate parameters to determine corrective action to return parameter to reference. File this document in Tab 1, Facility Certification, and retain until superseded by the next annual certification.

11.10.2. Maintain a facility record at each ATCALS facility subject to certification. This record is a transitory portion of the equipment historical file. The site applicable forms prescribed in this chapter are mandatory and must be completely filled out. Superseded data should be retained in the work center equipment historical file.

11.10.2.1. The facility record will contain the following information:

11.10.2.1.1. Tab 1, Facility Certification. Contains the AFTO Forms 499. Annual certification will be annotated on a new AFTO Form 499 and all subsequent repair/adjustment and special certifications will be recorded and retained until the next annual certification. File additional forms/documentation completed during the annual certification in this tab.

11.10.2.1.2. Tab 2, Reference Data. Contains the reference flight inspection report and all data recorded following the reference flight inspection. Each page must be clearly marked, at the top, "REFERENCE DATA." When references do change as a result of maintenance, parts replacements, etc., make single line through the changed item on the original reference data worksheet, annotate the new reference, and annotate the date the change was made. Make appropriate comments on the AFTO Form 499.

11.10.2.1.3. Tab 3, Preventive Maintenance Inspection (PMI) Data Collection. Contains data recorded during PMIs as required by ATCALS TOs. All required blocks on the appropriate forms must be completed. An explanation is required in the remarks section of the form if required data is not recorded. The remarks section of the form may be used to document trends/adjustments made during PMIs. If adjustments are made during the PMI, the final reading will be recorded. Adjustments that affect certifiable parameters must be documented on AFTO Form 499.

11.10.2.1.4. Tab 4, Periodic Flight Inspection Reports. Contains the latest two periodic flight inspection reports and the FAA Form 8240-22, **Facility Data Sheet**, and will be maintained until superseded. Validate accuracy with Terminal Instrument Procedures (TERPS) and document on AFTO Form 499 in conjunction with annual certification.

11.10.2.1.5. Tab 5, PMI Ground Check. Contains data recorded during PMIs to determine radiation characteristics as required by TOs.

11.10.2.1.6. Tab 6, Other Data. Contains any site information not filed elsewhere, (e.g., Mobile Depot Maintenance, Special Maintenance Team, ATCALS Evaluations, Air Force Engineering and Technical Services trip reports, unique facility information, etc.).

11.10.2.1.6. **(ANG)** Include a copy of the technician certification authorization letter.

11.11. Certification of Radar Equipment.

11.11.1. Accomplish certification of radar equipment according to paragraph **11.8.** using applicable TO procedures. Document the current equipment performance readings and compare to tolerances specified in the applicable maintenance TOs, FAA orders, AFCEMIs, etc. Results may indicate maintenance actions are needed to return equipment to acceptable standards.

11.11.2. Maintain a facility record at each ATCALS facility subject to certification. This record is a transitory portion of the equipment historical file. The site applicable forms prescribed in this chapter are mandatory and must be completely filled out. Superseded data should be retained in the work center equipment historical file.

11.11.2.1. The facility record will contain the following information:

11.11.2.1.1. Tab 1, Facility Certification. Contains the AFTO Form(s) 499. Annual certification will be annotated on a new AFTO Form 499 and all subsequent repair/adjustment and special certifications will be recorded and retained until the next annual certification. File additional forms/documentation completed during the annual certification in this tab.

11.11.2.1.2. Tab 2, Reference Data. Contains the reference flight inspection report and all data recorded following the reference flight inspection. Each page must be clearly marked, at the top, "REFERENCE DATA."

11.11.2.1.3. Tab 3, Preventive Maintenance Inspection (PMI) Data Collection. Contains data recorded during PMIs as required by ATCALS systems TOs, if applicable. All required blocks on the appropriate forms must be filled in. An explanation is required in the remarks section of the form if required data is not recorded. The remarks section of the form may be used to document trends/adjustments made during PMIs. If adjustments are made during the PMI, the final reading will be recorded.

11.11.2.1.4. Tab 4, Periodic Flight Inspection Reports. Contains the latest two periodic flight inspection reports and the FAA Form 8240-22, and will be maintained until superseded.

11.11.2.1.5. Tab 5, Not Used.

11.11.2.1.6. Tab 6, Other Data. Contains any site information not filed elsewhere, (e.g., Mobile Depot Maintenance, Special Maintenance Team, ATCALS Evaluations, Air Force Engineering and Technical Services trip reports, unique facility information, etc.).

11.11.2.1.6. **(ANG)** Include a copy of the technician certification authorization letter.

11.12. DELETED.

11.12.1. DELETED.

11.12.2. DELETED.

11.12.3. DELETED.

11.12.3.1. DELETED.

11.12.3.2. DELETED.

11.13. DELETED.

11.13.1. DELETED.

11.13.2. DELETED.

11.13.2.1. DELETED.

11.13.2.1.1. DELETED.

11.13.2.1.2. DELETED.

11.13.2.1.3. DELETED.

11.14. Certification of Deployable Air Traffic Control and Landing Systems (DATCALS).

11.14.1. DATCALS consists of equipment that meets requirements defined in paragraph **11.5.** or listed in TO 31Z3-822-2.

11.14.2. DATCALS may not have reference data or flight inspection reports available with initial deployment. All certifiable parameters should be verified and documented to be in tolerance as required by applicable technical data.

11.14.3. AFMAN 11-225 authorizes military commanders to authorize use of the systems without current flight inspections for military only. *NOTE:* All aircraft under contract with DOD are considered military aircraft. All efforts should be made to perform a "local" flyability check to validate sys-

tem operation. All critical parameters will be verified prior to the flyability check. Document on applicable certification worksheet/form to use as interim reference. Certifiable parameters should be maintained to these references until an official flight inspection is performed.

11.14.4. Once an official flight inspection is completed, system certifiable parameters should be recorded on appropriate worksheets/forms to use for future repairs/maintenance. All requirements of the annual certification should be performed. This data will become your official reference data for future certifications.

11.14.5. Accomplish annual certification of equipment by documenting the current equipment performance readings (on the certification worksheet/reference data forms) and comparing those readings with tolerances specified in the applicable maintenance TOs, FAA orders, AFCEMIs, etc. Results may indicate maintenance actions are needed to return the equipment to established tolerances. All certifications require appropriate comments and signature on the applicable certification worksheet.

11.14.6. Deployable ATCALS will be certified annually when operational and when it meets requirements defined in paragraph **11.5.** Annual certification will meet requirements defined in paragraph **11.8.1.** after official flight inspection is performed.

11.14.7. Equipment Repair/Adjustment. Equipment must be certified after repairs or adjustments that affect certifiable parameters to the greatest extent possible when the system is operational in a deployed environment. If, due to operational needs, the system cannot be recertified:

11.14.7.1. The condition will be immediately reported to air traffic control or using agency and an entry made on the appropriate AFTO form. Determination to continue use or shut down the facility/equipment must be made by ATC or using agency.

11.14.7.2. As soon as operations permit, the equipment shall be recertified and documented on the appropriate AFTO form as defined in TOs and this chapter.

11.14.7.3. If system cannot be returned to reference, notify the supporting or lead command for assistance.

11.14.8. Special. Certification will be performed after an air traffic incident/complaint, Flight Inspection discrepancy, significant change to airfield environment, (i.e., construction and snowfall, etc.). Evaluate parameters and determine corrective action required to return system to reference readings. An additional flight inspection may be required to validate equipment/system operation.

11.14.9. A facility record for each DATCALS system will be established. This record is a transitory portion of the equipment historical file. The applicable forms prescribed are mandatory, must be completely filled out, and will be maintained in the facility record. Superseded data should be retained in the deployed work center equipment historical file for trend analysis. This data is not required when system is returned to home station or in garrison.

11.14.10. The facility record will be established as defined in this chapter under the equipment heading of the related system, e.g., radar or NAVAIDS.

11.14.11. DELETED.

11.14.12. Equipment certification training will be performed when the equipment is in garrison, during unit training exercises, or not supporting an active mission. This is to ensure all personnel assigned to each system are certified on all equipment certification tasks.

11.15. Certification of Command Unique Air Traffic Control and Landing Systems (ATCALS). MAJCOMs, owning unique certifiable ATCALS that meet criteria in paragraph **11.5.**, must publish local certification procedures and documentation forms. MAJCOMs will provide certification procedures and forms to AFFSA for validation before allowing a system to control air traffic. Procedures and forms will be published in applicable TOs or other venue established by the MAJCOM. The MAJCOM is responsible for ensuring equipment is not utilized by other MAJCOMs by validating equipment use with depot.

11.16. ATCALS Maintenance Special Considerations.

11.16.1. Annual Reading Requirement. ATCALS technicians will read the following documents annually and upon initial assignment or reassignment to a work center responsible for maintenance of ATCALS equipment:

11.16.1.1. **Chapter 11** of this publication.

11.16.1.2. AFI 13-203, *Air Traffic Control (ATC)* (Equipment and Operating Procedures Chapters).

11.16.1.3. AFI 13-204 (General Information, AOF Management, and National Airspace System Chapters).

11.16.1.4. AFMAN 11-225 (Sections pertaining to equipment assigned).

11.16.2. Removing NAVAID Identification Signals. Aircrews are trained to consider the navigation signal unreliable when identification is not received or the identification code is "T E S T" (-. …-). The removal of identification is not a substitute for Notice to Airmen (NOTAM) requirements. Remove identification or transmit "T E S T" identification when the NAVAID facility is out of service. The preferred method is to remove identification when performing maintenance.

Figure 11.1. ATCALS Certification Flowchart.

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┌──────────────┐    ┌──────────────────┐    ┌────────────────────────┐
│   Annual     │    │ Facility Repair  │    │        Special         │
│(336-Day      │    │  (Unscheduled    │    │ (A/C Incident,         │
│ Interval)    │    │ Maintenance      │    │ environment change to  │
│              │    │ Performed)       │    │ airfield, Flight Check │
└──────────────┘    └──────────────────┘    │ discrepancy, etc.)     │
                                             └────────────────────────┘

                    ╱ Facility  ╲
                   ╱  Reference  ╲
                   ╲    Data     ╱
                    ╲           ╱

                   ◇ Readings ◇          ┌──────────────┐
                   ◇  match   ◇─── N ────│  Additional  │
                     ◇      ◇            │ Maintenance  │
                                         │  Performed   │
                       Y                 └──────────────┘

                                         ┌──────────────┐
                                         │ Contact      │
                                         │ MAJCOM       │
                                         │ for          │
                                         │ Assistance   │
                                         └──────────────┘

                                          ╱ Facility  ╲
                                         ╱  Reference  ╲
                                         ╲    Data     ╱
                                          ╲           ╱

   ╭──────────────╮      Y            ◇ Readings ◇
   │ Update and   │───────────────────◇  Match   ◇
   │ Sign AFTO    │                     ◇      ◇
   │ Form 499     │                        │
   ╰──────────────╯                        N

              ┌─────────────────────────────────────────────────────┐
              │ COM reports facility condition to Senior Air Traffic │
              │ Controller.                                          │
              │ ATC determines whether or not to close facility.     │
              │ If facility is deemed unusable, maintenance annotates│
              │                   AFTO Form 499                      │
              └─────────────────────────────────────────────────────┘
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Chapter 12

**INFORMATION COLLECTIONS, RECORDS, AND FORMS OR INFORMATION
MANAGEMENT TOOLS (IMT)**

12.1. Information Collections, Records, and Forms or Information Management Tools (IMT).

12.1.1. Information Collections. No information collections are created by this publication.

12.1.2. Records. Records pertaining to operational capability reporting are created by this publication (paragraph **4.5.3.**). Retain and dispose of these records according to Air Force Web-RIMS RDS, Table 11-4 (will become Table 10-16), located at **https://webrims.amc.af.mil/rds/index.cfm**.

12.1.3. Forms or IMTs (Adopted and Prescribed).

12.1.3.1. Adopted Forms or IMTs. See **Table 12.1.**

Table 12.1. Adopted Forms or IMTs.

FORM	TITLE
OMB Form 0701-0141	**Intercontinental Ballistic Missile Hardened Intersite Cable Right-of-Way Landowner/Tenant Questionnaire**
FAA Form 8240-22	**Facility Data Sheet**
DD Form 1144	**Support Agreement**
DD Form 1574	**Serviceable Tag - Material**
DD Form 1574-1	**Serviceable Label - Material**
Standard Form 364	**Report of Discrepancy/Supply Discrepancy Report (ROD/SDR)**
AF IMT 9	**Request for Purchase**
AF IMT 55	**Employee Safety and Health Record**
AF Form 79	**Cash Collection Record (Storage Safeguard)**
AF IMT 185	**Project Order**
AF IMT 457	**USAF Hazard Report**
AF Form 623	**Individual Training Record Folder**
AF IMT 623a	**On-the-Job Training Record Continuation Sheet**
AF IMT 847	**Recommendation for Change of Publication**
AF IMT 1067	**Modification Proposal**
AF IMT 1146	**Engineering Change Request/Authorization**
AF Form 1261	**Communications and Information Systems Acceptance Certificate**
AF Form 1339	**Dining Hall Signature Record (Storage Safeguard)**
AF IMT 1378	**Civilian Personnel Position Description**
AF IMT 2001	**Notification of TCTO Kit Requirements**
AF IMT 2005	**Issue/Turn-In Request**
AF Form 2413	**Supply Control Log**
AF Form 2414	**Verification Worksheet**
AF IMT 2419	**Routing and Review of Quality Control Reports**
AF IMT 2420	**Quality Control Inspection Summary**
AF IMT 2447	**Telephone Trouble Log**
AF IMT 3215	**IT/NSS Requirements Document**
AF IMT 3615	**Required Data for Performing PAR Alignment**
AF Form 3951	**Intercontinental Ballistic Missile Hardened Intersite Cable Right-of-Way Landowner/Tenant Questionnaire**
AFTO IMT 22	**Technical Manual (TM) Change Recommendation and Reply**

FORM	TITLE
AFTO Form 26D	**Inspection Work Document**
AFTO Form 47X-Series (when published)	**Electronic Set Inventory Checklists**
AFTO IMT 95	**Significant Historical Data**
AFTO Form 217	**Certification of Mobile Depot Maintenance Accomplished**
AFTO IMT 291	**Near Field Localizer Ground Check Record**
AFTO Form 292	**Composite Near Field Ground Check (LRA)**
AFTO Form 293	**FAR Field Localizer Ground Check Record**
AFTO Form 294	**Composite Far Field Ground Check (LRA)**
AFTO IMT 295	**Glideslope Reference Data**
AFTO IMT 296	**Localizer Reference Data**
AFTO IMT 297	**Localizer Preventive Maintenance Meter Readings**
AFTO IMT 298	**Glideslope PME Data**
AFTO IMT 299	**AN/GRN-22 Reference/Preventative Maintenance Data**
AFTO IMT 300	**AN/FRN-44 VOR Reference Data**
AFTO Form 349	**Maintenance Data Collection Record**
AFTO Form 470	**Electronic Set Inventory Checklist**
AFTO Form 471	**Electronic Set Inventory Checklist Configuration Data**
AFTO Form 472	**Electronic Set Inventory Checklist Completion Data**
AFTO Form 499	**ATCALS Certification Worksheet**
AFTO Form 500	**DBRITE Facility Reference Data**
AFTO IMT 501	**AN/FPN62 PAR Facility Reference Data**
AFTO Form 502	**AN/GPN-12 Facility Reference Data**
AFTO IMT 503	**AN/GPN-20 Facility Reference Data**
AFTO Form 504	**AN/GPN-22 Facility Reference Data**
AFTO IMT 505	**AN/MPN-14K ASR Facility Reference Data**
AFTO Form 506	**AN/TPN-24 ASR Facility Reference Data**
AFTO Form 507	**AN/TPN-25 PAR Facility Reference Data**
AFTO Form 508	**AN/TPX-42 Facility Reference Data**
AFTO IMT 509	**ATC Radio Transmitter Certification Worksheet**
AFTO IMT 510	**ATC Radio Receiver Certification Worksheet**
AFTO IMT 511	**ATC Antenna Coupler Certification Worksheet**
AFTO IMT 514	**ATC Transceiver Certification Worksheet**

FORM	TITLE
AFTO Form 515	**AN/TRN-26 Facility Reference**
AFTO Form 516	**MMLS Flight Inspection Data**
AFTO Form 517	**MMLS Split Site Facility Data Log (AZ)**
AFTO IMT 518	**MMLS Collocated Site Facility Data Log**
AFTO Form 519	**MMLS Split Site Facility Data Log (EL)**
AFTO IMT 520	**PMR Reference Data Readings**
AFTO IMT 521	**AN/TRN-41 TACAN Facility Reference Data**

12.1.3.2. Prescribed Forms or IMTs. See **Table 12.2.**

Table 12.2. Prescribed Forms or IMTs.

FORM	TITLE
AF IMT 3601	**AN/URN-5 Meter Readings**
AF IMT 3900	**Quality Control Checksheet**

DONALD J. WETEKAM, Lt Gen, USAF
DCS/Installations and Logistics

(ANG)

Craig R. McKinley, Lieutenant General, USAF
Director, Air National Guard

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

OSHA Standard 1910.269, *Electric Power Generation, Transmission, and Distribution*

DODD 1225.6, *Equipping the Reserve Forces*

DOD 7000.14-R, Volume 1, *General Financial Management Information, Systems and Requirements,* April 2001

DOD 7000.14-R, Volume 8, *Civilian Pay Policy and Procedures*, February 2002

DISAC 310-70-57, *Defense Information Infrastructure (DII) Quality Assurance Program*

AFPD 21-1, *Air and Space Maintenance*

AFPD 21-3, *Technical Orders*

AFPD 32-90, *Real Property Management*

AFMD 27, *Headquarters Air Force Flight Standards Agency (AFFSA)*

AFMAN 10-401, Volume 1, *Operation Plan and Concept Plan Development and Implementation*

AFI 10-403, *Deployment Planning and Execution*

AFI 10-602, *Determining Mission Capability and Supportability Requirements*

AFI 10-901, *Lead Operating Command—Communications and Information Systems Management*

AFMAN 11-225, *United States Standard Flight Inspection Manual*

AFI 13-203, *Air Traffic Control*

AFI 13-204, *Functional Management of Airfield Operations*

AFI 21-101, *Aerospace Equipment Maintenance Management*

AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*

AFI 21-105, *Air and Space Equipment Structural Maintenance*

AFI 21-108, *Maintenance Management of Space Systems*

AFI 21-110, *Engineering and Technical Services Management and Control*

AFI 21-113, *Air Force Metrology and Calibration (AFMETCAL) Program*

AFI 21-303, *Technical Orders*

AFI 21-404, *Developing and Maintaining Communications and Information Systems Installation Records*

AFI 23-106, *Assignment and Use of Standard Reporting Designators*

AFMAN 23-110, *USAF Supply Manual*

AFI 23-111, *Management of Government Property in Possession of the Air Force*

AFI 25-201, *Support Agreement Procedures*

AFI 32-1065, *Grounding Systems*

AFH 32-1084, *Facility Requirements*

AFI 32-7061, *The Environmental Impact Analysis Process*

AFI 32-9003, *Granting Temporary Use of Air Force Real Property*

AFI 33-101, *Communications and Information Management Guidance and Responsibilities*

AFI 33-103, *Requirements Development and Processing*

AFI 33-104, *Base Level Planning and Implementation*

AFMAN 33-105, *Engineering and Installation Services*

AFI 33-112, *Computer Systems Management* (will become Air Force Information Technology (IT) Asset Management)

AFI 33-118, *Radio Frequency (RF) Spectrum Management*

AFI 33-202, Volume 1, *Network and Computer Security*

AFI 33-324, *The Information Collections and Reports Management Program; Controlling Internal, Public, and Interagency Air Force Information Collections*

AFI 33-360, Volume 1, *Air Force Content Management Program--Publications*

AFI 33-360, Volume 2, *Content Management Program—Information Management Tool (IMT)*

AFI 36-2104, *Nuclear Weapons Personnel Reliability Program*

AFI 36-2201, Volume 1, *Training Development, Delivery, and Evaluation*

AFI 36-2201, Volume 2, *Air Force Training Program Training Management*

AFI 36-2201, Volume 3, *Air Force Training Program On the Job Training Administration*

AFMAN 37-123, *Management of Records* (will become AFMAN 33-363)

AFI 38-101, *Air Force Organization*

AFI 63-107, *Integrated Product Support Planning and Assessment*

AFI 63-124, *Performance-Based Service Contracts (PBSC)*

AFI 63-1101, *Modification Management*

AFI 63-1201, *Assurance of Operational Safety, Suitability, and Effectiveness*

AFI 65-501, *Economic Analysis*

AFI 65-601, Volume 1, *Budget Guidance and Procedures*

AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program*

AFCSM 21-556, Volume 2, *Core Automated Maintenance System (CAMS) Introduction to CAMS Software User Manual*

AFCSM 21-560, Volume 2, *Core Automated Maintenance System (CAMS) C-E Equipment Status and Inventory Reporting*

AFCSM 21-568, Volume 2, *Time Compliance Technical Order (TCTO) Software User Manual*

AFJQS 2EXXX-201F, *Maintenance Control*

AFJQS 2EXXX-201G, *Maintenance Support*

ARJQS 2EXXX-201J, *Maintenance Training Program*

AFJQS 2EXXX-201L, *Communications-Electronics (C-E) Work Center Managers Handbook*

AFJQS 2EXXX-201P, *Work Center Test Equipment Management*

AFOSHSTD 48-9, *Radio Frequency Radiation (RFR) Safety Program*

AFOSHSTD 91-25, *Confined Spaces*

AFOSHSTD 91-50, *Communications Cable, Antenna, and Communications-Electronic (C-E) Systems*

AFOSHSTD 91-501, *Air Force Consolidated Occupational Safety Standard*

AFOSHSTD 161-21, *Hazard Communication* (will become AFI 90-821)

AFMQCC 100-4, *Communications-Electronics (C-E) Care and Management of Test, Measurement and Diagnostic Equipment (TMDE)*

AFMQCC 200-3, *Communications-Electronics (C-E) Project Review*

TO 00-5-1, *AF Technical Order System*

TO 00-5-15, *Air Force Time Compliance Technical Order Process*

TO 00-5-17, *Users Manual-USAF Computer Program Identification Numbering (CPIN) System*

TO 00-20-1, *Aerospace Equipment Maintenance Inspection, Documentation, Policies, and Procedures*

TO 00-20-2, *Maintenance Data Documentation*

TO 00-20-3, *Maintenance Processing of Reparable Property and Repair Cycle Asset Control System*

TO 00-20-14-CD-1, *Air Force Metrology and Calibration Program*

TO 00-25-107, *Maintenance Assistance*

TO 00-25-108, *Communications-Electronics (C-E) Depot Support*

TO 00-25-195, *Source, Maintenance, and Recoverability Coding of Air Force Weapons, Systems, and Equipment*

TO 00-25-234, *General Shop Practice Requirements for the Repair, Maintenance and Test of Electrical Equipment (ATOS)*

TO 00-35D-2, *Electronic Set Inventory Checklist for Ground Communications-Electronic (C-E) Equipment*

TO 00-35D-54, *USAF Materiel Deficiency Reporting and Investigating System*

TO 1-1-689, *Organizational/Unit and Intermediate Maintenance—Avionics Cleaning and Corrosion Prevention/Control*

TO 21M-LGM30F-2-20-1, *Hardened Intersite Cable System*

TO 31W3-10-22, *Signal Manual - Telecommunications Engineering, Outside Plant, Telephone*

TO 31Z-10-4, *Electromagnetic Radiation Hazards, Appendix A*

TO 31Z-10-37, *General Engineering Technical Manual - Corrosion Prevention and Protection*

TO 31Z3-822-2, *Service Manual—Air Traffic Control and Landing Systems (ATCALS) General Site Requirements, 404L*

TO 32-1-101, *Use and Care of Hand Tools and Measuring Tools*

TO 33-1-27, *Logistic Support of Precision Measurement Equipment*

TO 33K-1-100-CD-1, *TMDE Calibration Notes Maintenance Data Collection Codes, Cal Measurement Summaries Calibration Procedure, Calibration Interval and Work Unit Code Reference Manual*

Abbreviations and Acronyms

AEF—Aerospace Expeditionary Forces

AETC—Air Education and Training Command

AFCA—Air Force Communications Agency

AFCEMI—Air Force Communications-Electronics Maintenance Instruction

AFCFM—Air Force Career Field Manager

AFCSM—Air Force Computer Systems Manual

AFETS—Air Force Engineering Technical Services

AFFSA—Air Force Flight Standards Agency

AFJQS—Air Force Job Qualification Standard

AFKS—Air Force Knowledge Services

AFMAN—Air Force manual

AFMC—Air Force Materiel Command

AFMETCAL—Air Force Metrology and Calibration

AFMQCC—Air Force Maintenance Quality Control Checksheet

AFOSH—Air Force occupational safety and health

AFPD—Air Force policy directive

AFQTP—Air Force Qualification Training Package

AFSC—Air Force Specialty Code

AFSPC—Air Force Space Command

AFTO—Air Force Technical Order

AGE—aerospace ground equipment

AHE—Automated History Entry

AIA—Air Intelligence Agency

ALC—Air Logistics Center

AOF—Airfield Operations Flight

AS—allowance standards

ATC—Air Traffic Control

ATCALS—Air Traffic Control and Landing Systems

AWP—awaiting parts

BCE—Base Civil Engineer

BPID—blueprint phase implementation directive

C4—command, control, communications and computers

CA—cable affair

CA/CRL—custodian authorization/custody receipt listing

CAMS—Core Automated Maintenance System

CAO—Cable Affairs Officer

C-E—Communications-Electronics

CEMCAB—C-E Maintenance Chiefs Advisory Board

CETS—contract engineering and technical services

CFETP—Career Field Education and Training Plan

CIRS—Circuit Identification and Recording System

COM—Chief of Maintenance

CONOPS—Concept of Operations

COTS—commercial-off-the-shelf

CPIN—Computer Program Identification Number

CRA—Centralized Repair Activity

CSEP—Communications Standardization and Evaluation Program

CSIR—communications and information systems installation records

CSO—communications and information systems officer

CTK—composite tool kit

CTOM—Centralized Technical Order Management

CUT—cross-utilization training

DAO—Defense Accounting Office

DATCALS—Deployed Air Traffic Control and Landing Systems

DIFM—due in from maintenance

DII—defense information infrastructure

DISA—Defense Information System Agency

DOC—designed operational capability

DOD—Department of Defense

DREAMS—Document Routing Entry and Mail System

DRU—Direct Reporting Unit

DSN—Defense Switched Network

EDD—estimated delivery date

EEIC—element of expense identification code

EI—Engineering and Installation

EIP—equipment inoperative for parts

ERRC—expendability, recoverability, reparability code

ESD—electrostatic discharge

ESR—equipment status reporting

ETIC—estimated time in commission

ETRO—estimated time of return to operation

ETS—engineering and technical services

FAA—Federal Aviation Administration

FAD—force activity designator

FSMA—functionally supported maintenance activity

FTD—field training detachment

GAS—graduate assessment survey

GSU—geographically separated unit

HAZCOM—hazardous communications

HAZMAT—hazardous material

HICS—hardened intersite cable system

HTSA—Host-Tenant Support Agreement

HVAC—heating, ventilation and cooling

I&SG—interchangeable and substitute group

ICAP—integrated communications access package

ICBM—Intercontinental Ballistic Missile

ILSP—integrated logistics support plan

IMDS—Integrated Maintenance Data System

IT—information technology

ITAMS—Information Technology Asset Management System

JCN—job control number

JDD—job data documentation

JQS—job qualification standard

LDL—low density level

LF—launch facility

LOGDET—logistics detail report

LOM—list of materials

LRS—logistics readiness squadron

LRU—line replaceable unit

LSP—logistics support plan

LWC—local work cards

MAD—maintenance action directive

MAJCOM—major command

MATAG—Maintenance and Training Advisory Group

MDC—maintenance data collection

MDM—mobile depot maintenance

MEO—most efficient organization

MICAP—mission capability

MIL—master inventory list

MIS—Maintenance Information System

MOA—memorandum of agreement

MOC—Maintenance Operations Center

MOI—maintenance operating instruction

MOU—memorandum of understanding

MQCC—Maintenance Quality Control Checksheet

MSK—mission support kit

MTL—master task list

MTP—master training plan

MTT—mobile training team

NAVAIDS—navigational aids

NRTS—not reparable this station

NSN—national stock number

O&M—operations and maintenance

OCCP—outside cable communications plant

OCCR—organization cost center records

OCR—office of collateral responsibility

OI—operating instruction

OPLAN—operations plan

OPR—office of primary responsibility

OSHA—Occupational Safety and Health Administration

OSS&E—operational safety, suitability, and effectiveness

OT&E—operational test and evaluation

P&I—planning and implementation

PAD—program action directive

PEC—program element code

PEP—performance evaluation program

PFMR—project fund manager records

PHS&T—package, handling, storage and transportation

PM—project manager

PMD—program management directive

PMEL—precision measurement equipment laboratory

PMI—preventive maintenance inspection

PPLAN—programming plan

PSA—project support agreements

PSMP—product support management plan

PWS—performance work statement

QA—quality assurance

QAE—quality assurance evaluators

QAR—quality assurance representative

RDO—redistribution order

RDS—Records Distribution Schedule

REMIS—Reliability and Maintainability Information System

RF—radio frequency

RM—reliability and maintainability

ROD—report of discrepancy

ROW—right-of-way

RSP—readiness spares package

SATCOM—satellite communications

SDR—supply discrepancy report

SIPTO—standard installation practices technical order

SJA—Staff Judge Advocate

SM—single manager

SMR—source, maintenance, and recoverability

SMT—special maintenance teams

SOR—source of repair

SOW—statement of work

SPECAT—special category

SPO—System Program Office

SRAN—stock record account number

SRD—standard reporting designator

STEM—Systems Telecommunications Engineering Manager

TAS—Tool Accountability System

TCTO—time compliance technical order

TDC—theater deployable communications

TDY—temporary duty

TEP—Technical Evaluation Program

TERPS—terminal instrument procedures

TFG—Total Force Group

TMDE—test, measurement, and diagnostic equipment

TMS—Telephone Management System

TO—technical order

TODO—Technical Order Distribution Office

TRN—turn-around

TSO—telecommunications service order

TTT—training task table

TVL—training visibility ledger

UHF—ultra high frequency

UJC—urgency justification code

UMD—unit manpower document

UND—urgency of need designator

USAF—United States Air Force

UTC—unit type code

VHF—very high frequency

WRM—war readiness material

WUC—work unit code

Terms

Chief of Maintenance (COM)—The senior manager, other than the commander, responsible for C-E maintenance. The local title of this individual may differ according to unit mission, size, or level of responsibility.

Functionally Supported Maintenance Activity (FSMA)— A production oriented maintenance activity that is normally geographically separated from its parent unit. It is functionally responsible to, and supported by, the COM but may not come under the organizational control of the parent unit COM.

Maintenance Activity— All staff functions, management support functions, and all production work centers directly or functionally responsible to a single COM.

Maintenance Staff—All staff functions supporting the maintenance production effort (i.e., MOC, QA, etc.)

Work Centers—C-E maintenance work centers are the production elements under the COM and are responsible to accomplish all maintenance. These functional elements may be combined, added, or deleted as necessary, depending upon the size, location, mission, or span of control.

World Wide Web Resources:

Referenced in Paragraph:	URL	Topic	Organization	Web Page POC:
Purpose; **9.10.2.**	**https:// webrims.amc.af.mil/rds/ index.cfm**	Records management	AFCA/RIMS Help Desk	**web.records@scott.af.mil** ; DSN 779-6771
1.17.6.; **1.17.6.3.**	**http://pdsm.wpafb.af.mil/ TOPRAC/TO-syste.htm**	TO manage-ment resources	Materiel Systems Group	**TOPP@wpafb.af.mil**
1.22.3.; **2.6.4.**; **2.6.15.**; **4.2.4.**; **5.17.7.**; **A10.2.**; **A10.3.**; **A10.4.**; **Table A12.1.**	**https:// private.afca.af.mil/ c-e_maint/**	HQ AFCA C-E Maintenance Arena	HQ AFCA/ WFLM	HQ AFCA/WFLM DSN 779-6281
2.2.1.	**http://il-u.hq.af.mil/ilm/ ilmm/cemaint**	C-E maintenance career field	HQ USAF/ILCX	DSN 425-1509
5.21.2.; **Table A12.1.**	**https:// www.asc.wpafb.af.mil/ infocen/smr**	DREAMS	Materiel Systems Group (MSG/MMF)	**msg.vic.support@wpafb. af.mil**
5.23.1.13.3.; **Table A12.1.**	**https:// wwwmil.keesler.af.mil/ 81trss/qflight/**	TTT listing	81st Training Wing, Keesler AFB MS	DSN 597-3343
5.23.1.13.3.; **Table A12.1.**	**https:// www.smartforce.com/ learning_community/ Custom/USAF/login.asp**	TTTs	USAF CBT System	**support@smartforce.co m**
A3.10.1.	**https:// private.afca.af.mil/ c-e_maint/mqccs.htm**	AFMQCCs	HQ AFCA/ WFLM	HQ AFCA/WFLM DSN 779-6281
A4.7.	**https:// private.afca.af.milc-e_ma int/cemis.htm**	AFCEMIs	HQ AFCA/ WFLM	HQ AFCA/WFLM DSN 779-6281

Attachment 1 (ANG)

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

ANGI 63-1150, *Modification Program Approval and Management*

Abbreviations and Acronyms

ANG—Air National Guard

ANGI—Air National Guard Instruction

ASOG—Air Support Operations Group

ASOS—Air Support Operations Squadron

ATCS—Air Traffic Control Squadron

CCG—Combat Communications Group

CCS—Combat Communications Squadron

CES—Communications Engineering Squadron

CISF—Chief Information Systems Flight

CMSF—Chief Mission Systems Flight

CRTC—Combat Readiness Training Center

FAM—Functional Area Manager(s)

METNAV—Meteorological Equipment and Navigational Aids

NEADS—Northeastern Air Defense Sector

SAV—Staff Assistance Visit

SEADS—Southeastern Air Defense Sector

WADS—Western Air Defense Sector

Terms

Air Traffic Control and Landing Systems (ATCALS)—(Added) Includes a large group of interrelated equipment associated with ATC facilities. As used herein, ATCALS applies to ATC NAVAIDS, radars, and ground radio communications equipment subject to Federal Aviation Administration (FAA) flight inspections and used by air traffic controllers for direct control of aircraft in the terminal environment. This equipment is both fixed and mobile, and is used by the Air Force to manage air traffic in the worldwide military and civil aviation environment.

Attachment 2

ENGINEERING AND INSTALLATION PROJECT DOCUMENTATION

A2.1. Introduction. The following explanation of project documentation encompasses each stage of the project process, from requirement submission to the final solution. Normally the base or unit planning and implementation flight provides and maintains the project documentation listed below. AFMQCC 200-3 is used to ensure all management areas are addressed. This is not applicable to Air Intelligence Agency (AIA) installation projects.

A2.2. Submitting the Systems Requirement. Users identify Command, Control, Communications and Computers (C4) system requirements using AF IMT 3215, or equivalent that cannot be met with a non-material solution (e.g., by changing tactics, operational doctrine, training, or policy or procedures). The requesting organization must provide a point of contact, description of mission deficiency or need, and required date. The base CSO will develop or obtain a technical solution to satisfy the requirement. Refer to AFI 33-103 for additional guidance.

A2.3. Technical Solutions. The CSO reviews the requirement and compares it with the C4 Systems Blueprint (commonly called the Blueprint) to determine how current systems and other requirements may affect the requirement's solution. The CSO obtains a technical solution with the assistance of the Base Systems Telecommunications Engineering Manager (STEM-B). The STEM-B provides a broad-range technical solution (with costs) within 30 days. The technical solution is then included in the Blueprint and prioritized for implementation. See AFI 33-103 for more information.

A2.4. C4 Systems Blueprint.

A2.4.1. The C4 Systems Blueprint is a planning document that provides a broad picture of what the base infrastructure should be. It covers the existing infrastructure baseline, on-going programs and projects, the target architecture, and a series of phased implementations to satisfy the target architecture (prioritized requirements). Both upward (originate at base or MAJCOM level) and downward (requested from Air Force or higher level) generated requirements are included. As an implementation plan, the C4 Systems Blueprint breaks into phases, attaches a broad-range cost to each phase, and is a basis for the Blueprint Phase Implementation Directive (BPID). The STEM may further break BPIDS down into smaller phases called elements. Each MAJCOM tasks its subordinate wings or activities to provide a prioritized list of projects for which the 38 EIG provides engineering, installation, and contracting services using the Total Force Group (TFG) which includes ANG EI units, 738 EIS, and 38 EIG contracting section.

A2.4.2. MAJCOMs consolidate individual wing submissions into a command FYXX workplan. The 38 EIG reviews each MAJCOM's workplan for workload that can be accomplished with EI resources.

A2.4.3. As funding is obtained or missions change, requirements are either canceled, completed self-help, via contract or forwarded to EI. When the base decides to fund a phase in the blueprint, the base CSO advises the STEM-B to produce a BPID. If EI is chosen, the STEM-B will forward the BPID to have a PM assigned. After PM selection, an implementation survey is completed. In addition, a technical solution, program schedule and funding schedule will be provided. The PM will coordinate problems with the base C4 planner, customer and STEM-B prior to developing the Project Support Agreement (PSA). Refer to AFI 33-104 for additional guidance.

A2.5. Project Support Agreement. A PSA is used to outline those items that must be accomplished at the base level to support the installation. A PSA is developed by an EI engineer for all requirements that will be accomplished by EI. The document is prepared after a site or desktop survey by the project engineer. A Project Identification Number is assigned to the project and will be used as a reference through project acceptance. The PSA is coordinated with C4 users and all tasked agencies (i.e., maintenance, civil engineering, frequency management, etc.). Specific support requirements are tasked by the PSA and must be completed prior to EI team arrival. A PSA concurrence is accomplished after review, and all concerns or recommended changes are addressed back to EI within 30 days. The PSA and PSA concurrence documents will then become part of the EI project package. See AFMAN 33-105, *Engineering and Installation Services* for additional details on PSA contents.

A2.6. EI Project Package. After EI receives PSA concurrence, a List of Materials (LOM) will be developed and the items ordered. A detailed installation package is developed and team arrival scheduled. All EI projects are engineered and installed according to the 31-10, 31W, and 31Z series Standard Installation Practices Technical Orders (SIPTO). EI project packages normally consist of two sections, TAB A and TAB B (refer to AFMQCC 200-3 for TAB contents). These contain all the information necessary for a project. Occasionally, a project must be amended to add material or change major portions of the package.

A2.7. Accepting the Solution.

A2.7.1. Structured acceptance procedures must be accomplished upon completion of an EI, contractor, or self-help project.

A2.7.2. The installation team performs three levels of testing.

A2.7.2.1. Pre-shakedown tests are performed to determine completeness of the installation, verify equipment condition and placement, and ensure safety standards are met.

A2.7.2.2. Shakedown tests are performed to determine whether the equipment meets performance specifications in the installed environment, and to detect and eliminate marginal parts and materiel before the operational tests.

A2.7.2.3. Operational tests demonstrate that the facility is properly installed and capable of performing its operational mission. Representatives from the operations and maintenance (O&M) QA activity will participate with the installation team to perform an acceptance evaluation in accordance with this instruction. Minor (deficiencies noted even though operational requirements are met) and major (operational requirements are not met) exceptions will be documented during the evaluation. Major exceptions must be cleared before the project is accepted. Minor exceptions are listed on the AF Form 1261 with the forecasted date of correction and activity responsible for correcting the problem. Applicable unit deficiencies (i.e., training, IMDS, procedures, etc) will be recorded on the CSEP special evaluation (e.g., AF IMT 2419 or equivalent form) and routed per local procedures.

A2.7.3. C4 plans and implementation personnel normally process project completion documentation according to AFI 33-104. These documents officially relieve the installation activity of responsibility for the facility and equipment, and form a baseline to close out the project.

Attachment 3

AIR FORCE MAINTENANCE QUALITY CONTROL CHECKSHEETS (AFMQCC)

A3.1. Introduction. AFMQCCs are guides used primarily by QA to help determine equipment condition, maintenance quality, and maintenance management effectiveness. Work center and staff functions may use AFMQCCs when performing self-inspections. AFMQCCs are standardized and published on AF IMT 3900. AFMQCCs are not directive. Resolve conflicts between AFMQCCs and TOs or other official Air Force publications in favor of the higher-level publication. Do not use AFMQCCs to operate, maintain (i.e., tuning, aligning, adjusting, etc.), or troubleshoot equipment. Do not limit equipment or management evaluations to the checks in the AFMQCCs. Add other checks to ensure a thorough evaluation. MAJCOMs may add any additional checks necessary to ensure unique mission requirements are met.

A3.2. Functional Grouping.

A3.2.1. AFMQCCs are organized by series designator number for major functional and equipment categories.

A3.2.2. Categories are as follows:

A3.2.2.1. Maintenance Management - 100 Series.

A3.2.2.2. Specialized Evaluations - 200 Series.

A3.2.2.3. METNAV Equipment - 300 Series.

A3.2.2.4. Radar Equipment - 400 Series.

A3.2.2.5. Radio Communications Equipment - 500 Series.

A3.2.2.6. Teletype/Cryptographic Equipment - 600 Series.

A3.2.2.7. Telephone/Wire Equipment - 700 Series.

A3.2.2.8. Computer/Display Equipment - 800 Series.

A3.2.2.9. Television/Imagery/Intrusion Detection Equipment - 900 Series.

A3.2.2.10. Systems Control Equipment - 1000 Series.

A3.2.2.11. Instrumentation and Telemetry Equipment - 1100 Series

A3.2.2.12. Electric Power Generation Equipment and Vehicles - 1300 Series.

A3.2.2.13. Tactical Communications Equipment - 1500 Series.

A3.3. Headquarters Air Force Communications Agency (HQ AFCA) Responsibilities.

A3.3.1. HQ AFCA/EVPM centrally manages the AFMQCC program for standard systems (systems used by more than one MAJCOM).

A3.3.2. HQ AFCA/EVPM will:

A3.3.2.1. Maintain a record copy of all published AFMQCCs.

A3.3.2.2. Coordinate new AFMQCCs with appropriate MAJCOMs to determine Air Force-wide applicability and estimated distribution requirements.

A3.3.2.3. Assign AFMQCC control numbers as appropriate and forward new AFMQCCs to HQ USAF/ILC for approval.

A3.3.2.4. Publish AFMQCCs and changes as required.

A3.4. Air Force Maintenance Quality Control Checksheet (AFMQCC) Officer of Primary Responsibility (OPR) Responsibilities.

A3.4.1. HQ USAF/ILXI assigns OPRs for AFMQCCs. *NOTE:* MAJCOM OPRs may appoint "unit level OPRs" for appropriate AFMQCCs, but MAJCOMs retain overall responsibility.

A3.4.2. AFMQCC OPRs will:

A3.4.2.1. Format AFMQCCs according to this attachment. Updated AFMQCCs are treated as new requirements and routed according to paragraph **A3.7.**

A3.4.2.2. Annually review appropriate AFMQCCs for continued need, accuracy and currency. Provide HQ AFCA/EVPM changes and updates as required.

A3.4.2.3. Evaluate and validate AFMQCCs before forwarding to HQ AFCA/EVPM for publication.

A3.5. General Air Force Maintenance Quality Control Checksheets (AFMQCC).

A3.5.1. Minor and common pieces of equipment may not need a separate AFMQCC, but may be covered by general-type AFMQCCs.

A3.5.2. Similar items of equipment (such as fuse panels, station batteries, panels, power supplies, etc.) may be included in a general AFMQCC. They contain those checks common to all or most of the similar equipment items. If required, local units may add additional checks for an individual equipment type.

A3.5.3. Use general checksheets in conjunction with equipment specific checksheets.

A3.6. Local Maintenance Quality Control Checksheets (MQCC).

A3.6.1. COMs authorize the use of local MQCCs. Forward local MQCCs with Air Force applicability through MAJCOM channels for processing according to paragraph **A3.7.**

A3.6.2. Local MQCCs:

A3.6.2.1. Are conspicuously marked or labeled as local MQCCs.

A3.6.2.2. Do not retain or use local MQCCs after an Air Force or MAJCOM MQCC is published on the same item of equipment, grouping of equipment (General MQCC), or management function.

A3.6.2.3. Supplement Air Force or MAJCOM MQCCs if local requirements dictate.

A3.7. Proposed Air Force Maintenance Quality Control Checksheets (AFMQCC). Use the format outlined in paragraph **A3.9.**

A3.7.1. MAJCOMs ensure evaluation and field-testing for proposed AFMQCCs prior to forwarding them to HQ AFCA/EVPM.

A3.7.1.1. Forward the proposed AFMQCCs to HQ AFCA/EVPM for processing in an electronic word format.

A3.7.1.2. Leave the date, control number, and signature blocks blank. These areas are completed by HQ AFCA/EVPM or Air Staff as appropriate.

A3.7.2. Include the projected number of MAJCOMS and users for proposed AFMQCCs.

A3.7.2.1. HQ AFCA/EVPM queries other MAJCOMs to determine Air Force wide applicability.

A3.7.3. Proposed AFMQCCs not meeting the criteria above or formatted according to paragraph A3.9. are returned for correction, update, or local use as appropriate.

A3.8. Changes to Air Force Maintenance Quality Control Checksheets (AFMQCC).

A3.8.1. Forward changes (except for minor punctuation and spelling errors) as AFMQCC revisions. To revise an AFMQCC, the complete AFMQCC is reaccomplished and processed in the same manner as new AFMQCCs (see paragraph A3.7.).

A3.8.2. Send changes to the appropriate AFMQCC OPR and HQ AFCA/EVPM for consolidation and formatting according to paragraph A3.7. Comply with MAJCOM and/or local procedures for changing their MQCCs.

A3.9. Checksheet Format.

A3.9.1. No specific format is required for AFMQCCs 100/200-series. Checks should be functionally grouped and comply with paragraph A3.9.10.

A3.9.2. Format AFMQCCs 300 through 1300-series as shown in paragraphs A3.9.4. through A3.9.11. See Figure A3.1. for an example.

A3.9.3. Format AFMQCCs 1500-series as shown in paragraphs A3.9.4. through A3.9.11. and additional sections as shown in the example in Figure A3.2.

A3.9.4. The title block of the AF IMT 3900 contains the nomenclature and noun of the equipment, normally the end item or system. If the title or type of equipment is not the end item, add the end item in parenthesis. EXAMPLE: AS-XXX Antenna Group (AN/GRT-XX Transmitter).

A3.9.5. Each section contains enough subparagraphs to determine overall performance, operation, and maintenance practices. Each subparagraph is limited to one sentence (if possible) and should be listed as a question that can be answered "yes" if the condition is correct and "no" if incorrect.

A3.9.6. Sections A and B contain, as a minimum, the checks shown in Figure A3.1. (Sample AFMQCC, general equipment). Use as many general purpose checksheets as applicable to the equipment being evaluated. Do not duplicate checks currently published in existing general purpose checksheets. Add additional checks if required.

A3.9.7. Section C contains checks to identify those critical parameters which best indicate the overall operation of the equipment. Parameters used to safeguard equipment, such as over-temperature indications, are considered critical. Critical performance checks are determined by the work center and QA personnel.

A3.9.8. Section D contains checks of other useful parameters performed if critical parameters fail to meet TO specifications.

A3.9.9. Do not use specific equipment parameter values (i.e., voltage and frequency measurements, etc.) in AFMQCCs.

A3.9.10. Provide specific references for each equipment parameter and evaluation item. Show the basic publication and paragraph.

A3.9.11. Except for 100/200-series AFMQCCs, all AFMQCCs will contain all sections of the standard format. Although a specific section may not apply, include it and note as "not applicable."

A3.10. Obtaining Air Force Maintenance Quality Control Checksheets (AFMQCC).

A3.10.1. AFMQCCs may be obtained from the following website: **https://private.afca.af.mil/ c-e_maint.mqcss.htm**.

Figure A3.1. Sample AFMQCC (300 through 1300 series) Checksheet.

QUALITY CONTROL CHECKLIST					PAGE OF
TITLE		OPR	CONTROL NO.		DATE
REQUIREMENTS			YES	NO	REMARKS
This MQCC is used in conjunction with AFMQCC 100-1, Records/Physical Condition and AFMQCC 200-1, C-E Grounding Systems; and AFMQCC 200-2, C-E Corrosion Prevention and Control. Maintenance Support (MS) evaluations are not limited to the checks in this MQCC. The MS evaluator may add any additional checks needed to ensure a complete evaluation is performed. Reviews, corrections, or changes to this AFMQCC should be processed per AFI 21-116. **REFERENCES:** AFMQCC 100-1, 18 Sep 01 AFMQCC 200-1, 19 Aug 02 TO (List applicable Technical references) _____ **A. RECORDS, TEST EQUIPMENT, TOs, ETC.:** 1. Are all records, test equipment, and TO inspection items of AFMQCC 100-1, Records, Physical, and Operational Condition satisfactory? (REF: AFMQCC 100-1 and Sect. A and end item Technical Orders) 2. Have all applicable PMIs been scheduled? (REF: Appropriate TOs) 3. (Other equipment peculiar evaluation items, such as checking ATCALS facility records, may be included in this section.) **B. PHYSICAL CONDITION AND MODIFICATION:** 1. Are all physical condition and modification evaluation items in AFMQCC 100 Records, Physical, and Operational Condition satisfactory? (REF: AFMQCC 100-1 and end item Technical Orders) 2. Are all electrical ground connection evaluation items AFMQCC 200-1, C-E Grounding Systems, satisfactory? (REF: AFMQCC 200-1) 3. Are all corrosion prevention and control evaluation items in AFMQCC 200-2, C-E Corrosion Prevention and Control, satisfactory? (REF: AFMQCC 200-2) 4. (Other equipment peculiar evaluation items concerning the physical condition or modification of the particular equipment may be included in this section.) **C. CRITICAL PERFORMANCE STANDARDS – MANDATORY EVALUATION ITEMS:** **D. OTHER PERFORMANCE STANDARDS – OPTIONAL EVALUATION ITEMS:**					

AF IMT 3900, AUG 94 (EF-V1)   "Overprint" HQ AFCA/EVPM

Figure A3.2. Sample 1500 Series AFMQCC.

QUALITY CONTROL CHECKLIST			PAGE OF	
TITLE	OPR	CONTROL NO.	DATE	
REQUIREMENTS		YES	NO	REMARKS
This MQCC is used in conjunction with AFMQCC 100-1, Records/Physical Condition and AFMQCC 200-1, C-E Grounding Systems; and AFMQCC 200-2, C-E Corrosion Prevention and Control. Maintenance Support (MS) evaluations are not limited to the checks in this MQCC. The MS evaluator may add any additional checks needed to ensure a complete evaluation is performed. Reviews, corrections, or changes to this AFMQCC should be processed per AFI 21-116. **REFERENCES:** AFMQCC 100-1, 18 Sep 01 AFMQCC 200-1, 19 Aug 02 TO (List applicable Technical references) _____ **A. RECORDS, TEST EQUIPMENT, TOs, ETC.:** 1. Are all records, test equipment, and TO inspection items of AFMQCC 100-1, Records, Physical, and Operational Condition satisfactory? (REF: AFMQCC 100-1 and Sect. A and end item Technical Orders) 2. Have all applicable PMIs been scheduled? (REF: Appropriate TOs) 3. (Other equipment peculiar evaluation items, such as checking ATCALS facility records, may be included in this section.) **B. PHYSICAL CONDITION AND MODIFICATION:** 1. Are all physical condition and modification evaluation items in AFMQCC 100 Records, Physical, and Operational Condition satisfactory? (REF: AFMQCC 100-1 and end item Technical Orders) 2. Are all electrical ground connection evaluation items AFMQCC 200-1, C-E Grounding Systems, satisfactory? (REF: AFMQCC 200-1) 3. Are all corrosion prevention and control evaluation items in AFMQCC 200-2, C-E Corrosion Prevention and Control, satisfactory? (REF: AFMQCC 200-2) 4. (Other equipment peculiar evaluation items concerning the physical condition or modification of the particular equipment may be included in this section.) **C. CRITICAL PERFORMANCE STANDARDS – MANDATORY EVALUATION ITEMS:** **D. OTHER PERFORMANCE STANDARDS – OPTIONAL EVALUATION ITEMS:**				

AF IMT 3900, AUG 94 (EF-V1)   "Overprint" HQ AFCA/EVPM

Figure A3.3. Sample 1500 Series AFMQCC (continued).

QUALITY CONTROL CHECKLIST					PAGE OF	
TITLE		OPR		CONTROL NO.	DATE	
REQUIREMENTS			YES	NO	REMARKS	
E. DEPLOYMENT EVALUATION:						
1. Predeployment						
2. Deployment						
3. Employment:						
a. Unloading Equipment						
b. Establishing C-E facilities						
4. Redeployment:						
a. Teardown and packing						
b. Loading of equipment						
c. Movement to home station and turn-in of equipment						
F. OPERATIONAL-READY EVALUATION:						
1. Physical condition						
2. Performance standards						
(NOTE: This section should contain checks necessary to determine if equipment is operational and installed properly. If time is a factor, and a full technical evaluation cannot be performed, the operational-ready evaluation or an abbreviated technical evaluation should be performed prior to reporting the equipment ready to maintenance operation center.)						

AF IMT 3900, AUG 94 (EF-V1)   "Overprint" HQ AFCA/EVPM

Attachment 4

**AIR FORCE COMMUNICATIONS-ELECTRONICS MAINTENANCE INSTRUCTIONS
(AFCEMI)**

A4.1. Introduction. This attachment establishes the procedures to develop, publish, distribute, implement, file, and dispose of a series of specialized publications (AFCEMI) for standard C-E equipment. AFCEMIs conform to the guidelines of this attachment.

A4.2. General.

A4.2.1. AFCEMIs are not published for use in place of Air Force TOs.

A4.2.2. AFCEMIs provide a means to issue inspection and servicing requirements, operational performance checks, and special maintenance instructions related to standard C-E equipment for which formal TO procedures are not published. They may also provide the means to issue optional or temporary modifications on C-E equipment. AFCEMIs will only be published for equipment that is applicable to more than one MAJCOM.

A4.2.3. AFCEMIs are published only after determining that the supporting ALC or contracted function cannot produce the required technical data or implement a permanent modification.

A4.3. Headquarters Air Force Communications Agency (HQ AFCA) Responsibilities.

A4.3.1. Processes and publishes proposed AFCEMIs and changes.

A4.3.2. Maintains record copies of AFCEMIs.

A4.4. Format. Format modification type AFCEMIs as full page documents. PMI type procedures may be formatted as TO -6WC workcards (to fit 6-hole binders) or as full page documents, per OPR decision.

A4.5. New, Revised, or Changed Air Force Communications-Electronics Maintenance Instructions (AFCEMI). Submit proposed AFCEMIs through command channels to HQ AFCA/EVPM in an electronic word format. Submit recommended changes, additions, or deletions through command channels to the AFCEMI OPR with a courtesy copy to HQ AFCA/EVPM.

A4.6. Numbering and Indexing. AFCEMIs are numbered in three series. Use the 100-series for instructions of a general nature, 200-series for special maintenance instructions and temporary modifications, and 300-series for inspection, servicing, and lubrication requirements and operational performance checks.

A4.7. Obtaining Air Force Communications-Electronics Maintenance Instructions (AFCEMI). AFCEMIs may be obtained from the following website: **https://private.afca.af.mil/c-e_maint/ cemis.htm**.

A4.8. Implementation. Implement AFCEMIs on receipt unless otherwise directed. Schedule modifications, inspections, servicing, lubricating, and operational checks in the same manner as –6 WC TOs/ TCTOs.

A4.9. Documentation.

A4.9.1. Document accomplishment of AFCEMIs as follows:

A4.9.1.1. Scheduled Periodic Inspection, Servicing, Lubrication, and Operational Performance AFCEMIs. Use the same procedures as those used to document -6WC TO work cards.

A4.9.1.2. Special Maintenance Instructions/Temporary Modifications. Upon completion of the AFCEMI procedures, make appropriate entry on AFTO IMT 95.

A4.10. Air Force Communications-Electronics Maintenance Instruction (AFCEMI) Discrepancies.

A4.10.1. Submit discrepancies pertaining to AFCEMIs through command channels to HQ AFCA/ EVPM for resolution. Identify discrepancies within 30 calendar days of AFCEMI implementation, citing the deficient paragraph and action required to correct the discrepancy.

A4.10.2. HQ AFCA/EVPM implements solutions of cited discrepancy within 30 calendar days of notification.

A4.11. Rescission of Air Force Communications-Electronics Maintenance Instructions (AFCEMI).

A4.11.1. AFCEMIs are rescinded when no longer required.

A4.11.2. Notify HQ AFCA/EVPM, through command channels, when an AFCEMI should be rescinded.

Attachment 5

SPECIAL MAINTENANCE TEAMS (SMT)

A5.1. Introduction. This attachment provides management procedures for SMTs. It also describes the relationships between SMTs and other programs.

A5.2. Mission. SMTs provide a specialized maintenance and training capability above those normally found in O&M units. SMTs perform emergency restoral of failed or degraded facilities, systems, or equipment and provide follow-on training to prevent recurrence of the problem. Duties include cyclic performance evaluation of facilities and systems; use of test equipment and procedures not normally possessed in the O&M work center; improving maintenance techniques at the technician level; initiating modification proposals; assisting in the completion of modifications; assisting work centers with self-help EI projects; and providing qualification or proficiency training on equipment, systems, facilities, and associated test equipment that is beyond the unit's capabilities.

A5.3. Use of Special Maintenance Teams (SMT). SMTs are available for use by any communications unit with a validated need. Request MAJCOM funds for required SMT support. SMTs do not perform organizational maintenance (on a routine or scheduled basis unless it is part of a training effort), provide upgrade training, or augment staff assistance teams or normal staff management functions unless directed by appropriate MAJCOM authorities.

A5.4. Manning. SMT selection criteria, locations, SMT composition, and application instructions are in the ZEUS Special Category (SPECAT) Assignment Guide, located at the Military Personnel Flight.

A5.5. Responsibilities:

A5.5.1. MAJCOMs and DRUs manage and operationally control subordinate SMT assets.

A5.5.2. MAJCOM SMT OPRs determine the use of these resources. SMTs will:

A5.5.2.1. Identify and correct equipment or system deficiencies using special test equipment and advanced techniques not possessed by the O&M unit.

A5.5.2.2. Establish a training program to ensure team members are knowledgeable of maintenance techniques and special test equipment and applications.

A5.5.2.3. Provide projected training requirements according to command directives.

A5.5.2.4. Participate in the TO and material deficiency programs according to TO 00-5-1 and TO 00-35D-54.

A5.5.2.5. Provide assistance on other programs as established by MAJCOM headquarters.

A5.5.2.6. Assist O&M work centers to identify and resolve training deficiencies, maintenance techniques, or equipment defects.

A5.6. Relationship to Other Programs.

A5.6.1. SMTs are a prime source of assistance when system evaluation, training deficiencies, or corrective maintenance actions are beyond local unit capabilities.

A5.6.2. The following paragraphs explain the relationship between SMTs and some communications system evaluation programs:

A5.6.2.1. Engineering and Technical Services (ETS) Program. Training deficiencies that cannot be corrected by SMTs are identified to the MAJCOM for consideration of ETS assistance. The ETS program also provides training on new or hard to maintain systems.

A5.6.2.2. Operational Test and Evaluation (OT&E) and DISA Technical Evaluation Program (TEP)(DISAC 310-70-57, *Defense Information Infrastructure (DII) Quality Assurance Program*). These evaluations refine estimates of the system's operational effectiveness and suitability; re-evaluate the system against changing operational needs; characterize the system and refine tactics, techniques, doctrine, and training programs; evaluate system changes; and identify deficiencies and confirm their correction. SMTs possess advanced technical knowledge, skills, and equipment, which can assist OT&E and TEP evaluation teams.

A5.6.2.3. Evaluation of Air Traffic Control and Landing Systems (ATCALS). This program determines the operational capabilities and limitations of a given ATCALS facility. ATC analysis is an independent evaluation of the air traffic services and procedures within airspace assigned to a particular facility. *NOTE:* SMT members do not normally participate as ATC evaluators, but may assist to resolve equipment problems during or after the evaluation.

A5.6.2.4. Acceptance of new C-E facilities. A C-E acceptance inspection determines if equipment is properly installed and operates according to established technical and performance standards. The inspection consists of a review of the operational test results, physical review of the installation, and verification of associated documents. SMTs may augment O&M units, as directed by higher headquarters, but will not accept new C-E facilities.

A5.6.2.5. Performance Evaluation Program (PEP) of Defense Information Infrastructure (DII) (DISAC 310-70-57, Supplement 5 and DISA Area supplements). This program's main objective is improvement of the Digital Communications System by evaluating operational facilities to identify deficiencies and problem areas that affect a station's operational capability, service to users, or system reliability. It also identifies significant problem areas to higher headquarters for timely corrective action. *NOTE:* SMT members do not normally participate as PEP evaluators, but may assist to resolve equipment problems during or after the evaluation.

A5.6.2.6. Radar Evaluation Program. This program provides periodic evaluation of each radar operational capability to measure radar reflectivity, range, azimuth, and height of reflected phenomena. The technical report on each radar evaluated assesses its operational capability and identifies significant deviations from standard operating characteristics.

A5.6.2.7. Defense Switched Network (DSN) Evaluation Program (DISA Area Regulations 195-Series). Program objectives are to provide in-depth evaluation of the DSN switching center to include items such as management techniques and timely detection and correction of identified problems. *NOTE:* SMT members may assist to resolve problems during or after the evaluation.

Attachment 6

CENTRALIZED REPAIR ACTIVITY (CRA)

A6.1. Introduction. This attachment contains the guidance, responsibilities and procedures to establish and manage a CRA. It authorizes the centralized repair for direct maintenance of C-E equipment; it also authorizes indirect off-equipment maintenance for designated equipment components. It applies to all Air Force organizations using a centralized repair concept to repair C-E equipment.

A6.2. Basic Concept of Centralized Repair.

A6.2.1. Centralized repair consolidates maintenance and supply resources at designated locations to support dispersed equipment. It integrates maintenance, supply, and other logistics elements providing a cohesive support program that enhances logistics responsiveness and operational effectiveness while reducing costs (see AFMAN 23-110 Volume 2, Part 2, Chapter 21, Section 21N).

A6.2.2. CRAs consolidate tools, test equipment, spare and repair parts, and skilled personnel to provide a combination of logistic services for:

A6.2.2.1. Direct maintenance, on a dispatch basis, for unattended equipment.

A6.2.2.2. Direct, usually off-equipment, maintenance assistance for tasks beyond the capability of using organizations.

A6.2.2.3. Indirect off-equipment maintenance and direct maintenance of designated reparable equipment.

A6.2.2.4. Control and distribution of reparable assets received for shop processing.

A6.2.2.5. Accomplishing using command maintenance at a central location.

A6.2.2.5.1. Establish CRAs for one system or type of equipment and to perform command maintenance functions on the base or site of the CRA.

A6.2.2.5.2. CRAs which accomplish direct or indirect off-equipment maintenance may include a designated supply function, a dedicated satellite account or a special support function within the supporting LRS complex. This function controls and processes reparable items and distributes serviceable items.

A6.2.2.6. Source of Repair (SOR). SORs are not CRAs as defined in this attachment; however, when jointly agreed to by a MAJCOM and HQ AFMC, CRAs may perform SOR maintenance for AFMC. Such workload is defined in a project directive and implemented via project order.

A6.3. C-E Centralized Repair Guidance.

A6.3.1. CRAs must provide clear economic advantages and an ability to sustain or increase maintenance and operational effectiveness. CRAs will not duplicate AFMC technology repair center (depot) capabilities unless agreed to by HQ AFMC.

A6.3.2. Specific C-E centralized repair procedures are as follows:

A6.3.2.1. Note that the centralized repair concept may be authorized when economic benefits are realized while effectively supporting operational readiness. Base decisions on logistics support

considerations and not on maintenance factors alone. Assess tradeoffs between each type of maintenance support.

A6.3.2.2. Periodically evaluate maintenance programs and plans for all systems and equipment to determine if changes (either consolidation or nonconsolidation) are appropriate. For existing systems, equipment, and components supported by a nonconsolidated maintenance concept at least one of the following benefits must be demonstrated or projected against the cost of converting to and sustaining consolidation.

A6.3.2.2.1. Improved maintenance effectiveness through better utilization of personnel and equipment by developing a greater technical capability.

A6.3.2.2.2. Reduced manpower, equipment, and material.

A6.3.2.2.3. Reduced order, shipping times and transportation costs.

A6.3.2.2.4. Consider the impacts on:

A6.3.2.2.4.1. Inventory control point and depot source of repair.

A6.3.2.2.4.2. Automated management systems.

A6.3.2.2.4.3. Procedural changes, waivers, or alternatives.

A6.3.2.2.4.4. Financial and inventory accounting policies and procedures.

A6.3.2.2.4.5. Organizational structures and work center manning.

A6.3.2.2.4.6. One-time implementation costs.

A6.3.2.2.4.7. Engineering and technical services.

A6.3.2.2.4.8. Interservice support agreements, where applicable.

A6.3.2.2.4.9. Programmed equipment life.

A6.3.2.2.4.10. Investment spares cost at all levels.

A6.3.2.2.4.11. Contractor maintenance.

A6.3.2.2.4.12. Geographical dispersal and relocation of equipment.

A6.3.2.2.4.13. Acquisition and life cycle support cost for common and peculiar equipment and tools.

A6.3.2.2.4.14. Obtaining required technical data.

A6.3.2.3. Implement the centralized repair concept only with the concurrence of all involved MAJCOMs/agencies (e.g., maintaining, host, AFMC and AIA) unless HQ USAF directs otherwise.

A6.3.2.4. Evaluate the centralized repair concept during the programming process for facilities, systems, and equipment and as a part of the maintenance planning cycle for new or improved systems.

A6.4. Centralized Repair Concept Responsibilities.

A6.4.1. HQ USAF/ILC establishes the overall guidance; reviews and approves plans, projects, programs, and management systems; and resolves proposed consolidation actions that do not have the concurrence of all involved MAJCOMs.

A6.4.2. MAJCOMs establish a focal point for CRA management:

A6.4.2.1. Continually monitor the support posture for assigned systems and equipment and periodically evaluate pertinent maintenance programs and plans to determine if changes are appropriate. Publish Maintenance Action Directive (MAD) authorizing and directing establishment of a CRA. MADs also identify equipment or systems supported by the CRA and any special funding arrangements, responsibilities, or procedures.

A6.4.2.2. Initiate action with other involved commands to establish CRAs and revise maintenance plans where appropriate.

A6.4.2.3. Coordinate changes to support posture with supported MAJCOMs.

A6.4.3. Note that supported MAJCOMs participate with maintaining commands to assess consolidation cost effectiveness and to develop CRA management procedures and other support functions, as necessary.

A6.4.4. HQ AFMC:

A6.4.4.1. Ensures maintenance plans and programs represent an integration of all support levels and logistics support plans identify specific procedures applicable to centralized repair.

A6.4.4.2. Ensures consolidation efforts are compatible with the functions of the inventory control point or national inventory control point.

A6.4.4.3. Ensures both wholesale and retail level logistics management functions support the centralized repair concept and its specific application.

A6.4.4.4. Participates with and supports MAJCOMs consolidation cost effectiveness assessments.

A6.4.4.5. Revises maintenance program plans and documentation to reflect centralized repair when applied.

A6.4.4.6. Monitors system and equipment support postures and recommends centralized repair to MAJCOMs when cost analysis indicates it is, or may be, appropriate.

A6.4.4.7. Ensures maintenance plans and programs include CRA requirements for new equipment and are outlined in the appropriate documents such as Program Management Directive (PMD), PAD, and ILSP.

A6.4.5. Assess application of the centralized repair concept as part of the maintenance planning cycle for systems and equipment being developed.

A6.4.6. Air Intelligence Agency (AIA) participates with involved MAJCOMs in all aspect of consolidation that affects cryptologic equipment.

A6.5. Authority to Establish Centralized Repair Activities (CRA).

A6.5.1. CRAs may be authorized in one of three ways:

A6.5.1.1. HQ USAF direction.

A6.5.1.2. Maintenance concepts. Maintenance concepts are normally developed during the acquisition programs concept, development, and validation phases. If maintenance support responsibility within the command can best be accomplished by a CRA, include this concept in the ILSP. Manpower, tools, test equipment, facilities, and other resources are programmed at this time.

A6.5.1.3. Maintenance policy reviews. Reviews of maintenance policies, procedures, and concepts for certain existing equipment may justify a centralized repair concept. A CRA may be established if the economic analysis is favorable and HQ AFMC and affected MAJCOMs concur.

A6.6. Centralized Repair Activity (CRA) Alignment. CRAs are functionally responsible to the MAJCOM headquarters but organizationally assigned to a communications unit as outlined in appropriate MADs and UMDs. Operate CRAs as work centers within the unit's maintenance activity.

A6.7. Parent Unit Chief of Maintenance (COM) Responsibilities.

A6.7.1. Operate the CRA according to applicable MADs, this attachment, and command directives.

A6.7.2. Appoint production evaluators.

A6.7.3. Respond to O&M assistance requests.

A6.7.4. Coordinate with base supply to ensure effective CRA supply procedures.

A6.7.5. Provide MAJCOMs with updated lists of supported assets to ensure AFMAN 23-110, Volume 2, remains current. The list includes the NSN, part number, and noun for each asset supported by the CRA. Submit recommended additions or deletions to the list of supported assets.

A6.7.6. Budget for the day-to-day operation and support of the CRA.

A6.8. Centralized Repair Activity (CRA) Responsibilities.

A6.8.1. Perform off-equipment maintenance that is beyond the capability of an O&M activity. Although a CRA does not normally duplicate depot capabilities, the CRA may be tasked to accomplish all maintenance for command supported equipment.

A6.8.2. CRAs may also be tasked to provide:

A6.8.2.1. On-site or telephonic assistance.

A6.8.2.2. Repair support to O&M activities under all MAJCOMs within a geographical area, or on a worldwide basis.

A6.8.2.3. Equipment modification beyond the capability of the O&M activity.

A6.8.2.4. On-equipment maintenance support when the CRA is collocated with operational equipment for which it is responsible.

A6.8.2.5. Training (in-house or on-site) on designated equipment.

A6.8.2.6. Special supply support and transportation of parts or subassemblies.

A6.8.2.7. Temporary O&M augmentation.

A6.9. Quality Assurance. Production inspectors appointed by the COM may be assigned part time (additional duty) or full time, depending on workload. Production inspectors inspect all items repaired by a CRA. Tag serviceable items with DD Form 1574, **Serviceable Tag - Material**, or DD Form 1574-1, **Serviceable Label - Material**, affix an inspection stamp according to TO 00-20-3. Production inspectors perform NRTS verification of items beyond the CRA's ability to economically repair.

A6.10. Requests to Establish a Centralized Repair Activity (CRA).

A6.10.1. Requests to establish a CRA in support of specific equipment, groups of equipment, or systems may be initiated at any organizational level. Submit requests through command channels.

A6.10.2. Requests should clearly demonstrate, through economic analysis, that the CRA provides overall savings while sustaining or enhancing operational requirements. Requests contain:

A6.10.2.1. Type of equipment (i.e., ATC radar, SATCOM, etc.), system (i.e., 486L, Scope Signal III, etc.), nomenclature, noun, and NSN of item to be supported by the CRA.

A6.10.2.2. Location of equipment operation and operating organization, base, MAJCOM, and federal agency.

A6.10.2.3. Unit currently providing maintenance support.

A6.10.2.4. How maintenance is currently being performed.

A6.10.2.5. Problems associated with current support concept.

A6.10.2.6. Suggested CRA support concept.

A6.10.2.7. Proposed CRA location (i.e., parent unit, base, etc.).

A6.10.2.8. Additional maintenance facilities required to house the CRA.

A6.10.2.9. Describe any manpower actions required according to command regulations.

A6.10.2.10. Expected monetary savings. Use the format for economic analysis in AFI 65-501, *Economic Analysis*.

A6.10.2.11. Additional documents supporting CRA establishment.

A6.10.2.12. Concurrence of other supported MAJCOMs.

A6.11. Manning. Staff CRAs to ensure efficient operation and effective workload flow. Identify manpower positions specifically authorized to support a particular CRA in the UMD under a functional account code peculiar to CRAs.

A6.12. Special Supply Procedures. All CRAs will comply with supply procedures outlined in AFMAN 23-110.

A6.13. Requests for Centralized Repair Activity (CRA) Assistance. Request CRA assistance according to MAJCOM requirements.

A6.14. Funding.

A6.14.1. Responsible MAJCOMs fund TDY and civilian pay.

A6.14.2. Trainee's parent units fund TDYs to train personnel at a CRA.

A6.14.3. Requesting MAJCOMs fund for CRA personnel sent TDY to provide technical assistance.

A6.14.4. Parts, material, packing, crating, and other base support costs are normally the responsibility of the MAJCOM when these support responsibilities are identified in the ILSP requiring the CRA maintenance concept.

A6.14.5. HQ AFMC reimburses material costs associated with workload performed under an approved project order using AF IMT 185, **Project Order**. Performing work centers include these requirements in their reimbursable operating budgets.

A6.15. Centralized Repair Activity (CRA) and Source of Repair (SOR) Workload Reporting.

A6.15.1. Report normal CRA workload according to TO 00-20-2.

A6.15.2. Do not report SOR workload, accomplished under an approved project order, in the MDC System. If required, MAJCOMs specify SOR workload reporting.

A6.15.3. Also note that if required, MAJCOMs specify reports required to support project order reimbursement billing.

A6.15.4. Remember MAJCOMs specify historical workload data retention requirements.

A6.15.5. Send newly issued project orders (e.g., AF IMT 185), host-tenant support agreements, or other documented agreements where support is provided to MAJCOMs for review and further distribution or coordination.

Attachment 7

ANTENNA PREVENTIVE MAINTENANCE INSPECTION (PMI) PROCEDURES

A7.1. Introduction. This chapter outlines antenna PMI and management responsibilities for C-E maintenance activities. It provides procedures for accounting and tracking PMIs, organizational responsibilities and the process for requesting assistance to perform maintenance if skills are not available within the unit.

A7.2. General. Proper antenna inspections and maintenance are essential to effective management of Air Force command, control, and communications. Maintenance personnel or appropriate personnel (i.e., contractor, MDM team, etc.) must inspect the antennas periodically to identify potential equipment deterioration. Antenna maintenance inspections will be conducted in accordance with antenna TOs. Programmed and unprogrammed depot maintenance will be requested according to TO 00-25-108.

A7.3. Responsibilities.

A7.3.1. HQ USAF/ILC establishes policy and assigns command and activity responsibilities for depot maintenance support of ground C-E systems and equipment.

A7.3.2. AFMC will provide C-E depot support (i.e., programmed or unprogrammed depot maintenance, technical assistance, modifications, etc.) according to TO 00-25-108. Request depot support when maintenance requirements exceed using or maintaining command's capability.

A7.3.3. MAJCOMs will:

A7.3.3.1. Establish policy and procedures to ensure Air Force antenna systems are tracked and managed in IMDS according to TO 00-20-2.

A7.3.3.2. Review and forward approved maintenance assistance requests according to TO 00-25-108, Figure 2.6 and section III.

A7.3.4. Owning/maintaining units will:

A7.3.4.1. Load and maintain inventory listings for all antenna systems in IMDS in accordance with TO 00-20-2 and AFCSM 21-556.

A7.3.4.2. Perform PMIs according to applicable technical manuals. Use IMDS to schedule and track all antenna maintenance actions. If no intervals are specified in the technical manuals, the COM will ensure PMI intervals are established. *NOTE:* Antenna PMIs must be performed at intervals according to applicable technical manuals, manufacturer's manual, AFCEMIs 300-1 and 300-7, or COM determination.

A7.3.4.3. Comply with C-E Antenna Identification according to AFCEMI 100-2.

A7.3.4.4. Notify the COM of any issues that degrade antenna support for communications services.

Attachment 8

MAINTENANCE MANAGEMENT REQUIREMENTS

A8.1. Maintenance Management Requirements. All personnel performing maintenance (regardless of AFSC) will follow the maintenance management requirements in this attachment. The maintenance management requirements are necessary to avoid unnecessary risks to personnel, prevent damage to systems and equipment, and to ensure equipment availability to meet mission requirements. Prior to performing maintenance, commanders and supervisors will use **Table A8.1.** through **Table A8.3.** to determine the maintenance management requirements for the three categories of systems and equipment listed below:

NOTE: Refer to paragraph **10.2.** for an overview of AFMC SM and non-AFMC SM supported equipment management.

A8.1.1. **Table A8.1.** includes the minimum maintenance management requirements for AFMC SM supported equipment. The table establishes minimum requirements to sustain AFMC SM supported C-E systems and equipment. Mission needs may dictate more stringent measures or requirements.

Table A8.1. AFMC SM-Supported Equipment.

AFMC SM SUPPORTED EQUIPMENT	*Examples: AN/FMQ-18, AN/GPN-22 and AN/GRR-24*
PROCESS	MINIMUM REQUIREMENTS
Use IMDS to document maintenance	Mandatory according to TO 00-5-15, TO 00-20 series, and AFI 21-116
Use IMDS to document training	Mandatory according to AFI 21-116
Modification/Configuration Management	Mandatory according to AFI 63-1101 and AFI 63-1201
Schedule and perform PMIs	Mandatory if required by equipment technical data or COM directs
HAZMAT and HAZCOM programs	Mandatory according to AFOSH Standards 91-50 and 161-21
Local, state, federal, and host nation environmental policy and guidance	Mandatory according to DOD and Air Force directives, 48-series and 91-series AFOSH standards, and command policy
Cannibalization procedures and documentation	Mandatory according to TO 00-20-2
Corrosion prevention and control program	Mandatory according to TOs 1-1-689, 31Z-10-37 and command policy
Electrostatic Discharge practices	Mandatory according to TO 00-25-234
Personnel evaluations	Conduct according to AFI 21-116
Technical evaluations	Conduct according to AFI 21-116
TMDE management	Mandatory according to TO 00-20-14
Availability, management, and condition of tools	Mandatory according to TO 32-1-101
Supply management	Mandatory according to AFMAN 23-110, Volume 1 and Volume 2 and TO 00-20-3
Technical data management	Mandatory according to 00-5 series TOs and AFI 21-303
Standard and specialized publications management	Mandatory according to AFI 33-360, Volume 1
Facility, system installation and equipment records management	Mandatory according to TO 00-20-1, TO 31W3-10-22 and AFI 21-404
Maintain equipment historical records	Mandatory according to 00-20 series TOs

AFMC SM SUPPORTED EQUIPMENT	Examples: AN/FMQ-18, AN/GPN-22 and AN/GRR-24
PROCESS	MINIMUM REQUIREMENTS
General housekeeping practices	Mandatory according to AFOSH Standards 91-50 and 91-501
Logistics support planning	Mandatory according to TO 00-25-108, AFI 10-602, AFI 10-901, and AFI 33-101
NRTS procedures	Mandatory according to TO 00-20-3
Radiation protection safety program	Mandatory according to AFOSH Standard 48-series
Warranty procedures	Mandatory according to TO 00-20-3 and AFI 21-116

A8.1.2. **Table A8.2.** includes the minimum maintenance management requirements for mission critical, non-AFMC SM supported equipment. The headquarters or field-level unit will determine if the system or equipment is considered mission critical. The table establishes minimum requirements to sustain mission critical, non-AFMC SM supported C-E systems and equipment. Mission needs may dictate more stringent measures or requirements.

Table A8.2. Mission Critical, Non-AFMC SM-Supported Equipment.

MISSION CRITICAL NON-AFMC SM SUPPORTED EQUIPMENT	*Examples: Voice Switches, TDC-ICAP, and CITS/AFSN*
PROCESS	MINIMUM REQUIREMENTS
Use IMDS to document maintenance	Mandatory according to TO 00-5-15, TO 00-20 series, and AFI 21-116
Use IMDS to document training	Mandatory according to AFI 21-116
Modification/Configuration Management	Mandatory according to AFI 63-1201, MAJCOM or local policy
Schedule and perform PMIs	Mandatory if required by equipment technical data or COM directs
HAZMAT and HAZCOM programs	Mandatory according to AFOSH Standards 91-50 and 161-21
Local, state, federal, and host nation environmental policy and guidance	Mandatory according to DOD and Air Force directives, 48-series and 91-series AFOSH standards, and command policy
Cannibalization procedures and documentation	Mandatory according to TO 00-20-2
Corrosion prevention and control program	Mandatory according to TOs 1-1-689, 31Z-10-37 and command policy
Electrostatic Discharge practices	Mandatory according to TO 00-25-234
Personnel evaluations	Conduct according to AFI 21-116 or AFI 33-115, Volume 2
Technical evaluations	Conduct according to AFI 21-116
TMDE management	Mandatory according to TO 00-20-14
Availability, management, and condition of tools	Mandatory according to TO 32-1-101
Supply management	Mandatory according to AFMAN 23-110, Volume 1 and Volume 2 and TO 00-20-3
Technical data management	Mandatory according to 00-5 series TOs and AFI 21-303
Standard and specialized publications management	Mandatory according to AFI 33-360, Volume 1

MISSION CRITICAL NON-AFMC SM SUPPORTED EQUIPMENT	*Examples: Voice Switches, TDC-ICAP, and CITS/AFSN*
PROCESS	MINIMUM REQUIREMENTS
Facility, system installation and equipment records management	Mandatory according to TO 00-20-1, TO 31W3-10-22 and AFI 21-404
Maintain equipment historical records	Mandatory according to 00-20 series TOs
General housekeeping practices	Mandatory according to AFOSH Standards 91-50 and 91-501
Logistics support planning	Mandatory according to TO 00-25-108, AFI 10-602, AFI 10-901, and AFI 33-101
NRTS procedures	N/A
Radiation protection safety program	Mandatory according to AFOSH Standard 48-series
Warranty procedures	Optional; command or local policy

A8.l.3. **Table A8.3.** includes the minimum maintenance management requirements for non-mission critical, non-AFMC SM supported equipment. The table establishes minimum requirements to sustain non-mission critical, non-AFMC SM supported C-E systems and equipment. Mission needs may dictate more stringent measures or requirements.

Table A8.3. Nonmission Critical, Non-AFMC SM Supported Equipment.

NON-MISSION CRITICAL NON-AFMC SM SUPPORTED EQUIPMENT	*Examples: Desktop Appliances (i.e. PCs, laptops, printers, etc.)*
PROCESS	MINIMUM REQUIREMENTS
Use IMDS to document maintenance	Optional; command or local policy
Use IMDS to document training	Mandatory according to AFI 21-116
Modification/Configuration Management	Optional; command or local policy
Schedule and perform PMIs	Mandatory if required by equipment technical data or COM directs
HAZMAT and HAZCOM programs	Mandatory according to AFOSH Standards 91-50 and 161-21
Local, state, federal, and host nation environmental policy and guidance	Mandatory according to DOD and Air Force directives, 48-series and 91-series AFOSH standards, and command policy
Cannibalization procedures and documentation	Mandatory; system program office or local guidance
Corrosion prevention and control program	Mandatory according to TOs 1-1-689, 31Z-10-37 and command policy
Electrostatic Discharge practices	Mandatory according to TO 00-25-234
Personnel evaluations	Conduct according to AFI 21-116 or AFI 33-115, Volume 2
Technical evaluations	Optional; command or local policy
TMDE management	Mandatory according to TO 00-20-14
Availability, management, and condition of tools	Mandatory according to TO 32-1-101
Supply management	Mandatory according to AFMAN 23-110, Volumes 1 and 2, and TO 00-20-3
Technical data management	Mandatory according to 00-5 series TOs and AFI 21-303
Standard and specialized publications management	Mandatory according to AFI 33-360, Volume 1
Facility, system installation and equipment records management	Mandatory according to TO 00-20-1, TO 31W3-10-22 and AFI 21-404
Maintain equipment historical records	Optional; system program office or local guidance

NON-MISSION CRITICAL NON-AFMC SM SUPPORTED EQUIPMENT	*Examples: Desktop Appliances* *(i.e. PCs, laptops, printers, etc.)*
PROCESS	MINIMUM REQUIREMENTS
General housekeeping practices	Mandatory according to AFOSH Standards 91-50 and 91-501
Logistics support planning	Mandatory according to TO 00-25-108, AFI 10-602, AFI 10-901, and AFI 33-101
NRTS procedures	N/A
Radiation protection safety program	Mandatory according to AFOSH Standard 48-series
Warranty procedures	Optional; command or local policy

Attachment 9

CLIMBING TRAINING REQUIREMENTS

A9.1. Introduction. This attachment clarifies established Air Force standards and policies for training of safety related tasks for all Communications-Electronics (C-E) career fields required to climb poles and towers. These requirements are applicable to active duty, Air National Guard and Air Force Reserve units. In addition, these standards and procedures apply to civilian personnel who are required to perform these tasks in their duty positions according to AFI 91-301, *Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) Program.*

A9.2. Scope. The only personnel authorized to climb poles and towers are those who have been properly trained, to include Pole Top rescue, and who are certified or in a training status under the observation of a qualified instructor. This requires military and civilian personnel to maintain climbing proficiency at those units that have climbing requirements as part of the unit mission (see OSHA Standard 1910.269, *Electric Power Generation, Transmission, and Distribution*). Although general safety and climbing principles are similar, different types of structures (i.e., towers, wood poles, metal poles, antennas, etc.) present unique challenges and require training approaches that are tailored to the specific type of structure. Commanders, supervisors or team members will prohibit individuals from climbing when a potentially unsafe condition exists (i.e., environmental, mental, physical, lack of experience, etc.).

NOTE: Climbing training devices for antennas and towers are identified in the applicable TO.

A9.3. Personnel Proficiency. Unit commanders will designate, in writing, all personnel required to maintain climbing proficiency.

A9.4. Initial Certification Procedures.

A9.4.1. Graduates of the Communications Cable and Antenna Systems Apprentice Course or other accredited climbing courses are recognized by the C-E Air Force Career Field Manager (AFCFM) as qualified climbers for a period of 90 days from the graduation date. At those units with existing climbing capabilities, the gaining unit must evaluate the graduates within 90 days from the graduation date to verify and document qualifications. The individual will be tested (oral and/or written and by practical demonstration) to ascertain knowledge of standard climbing safety practices and proficiency in climbing practices and procedures. This requirement ensures individuals who must climb and use protective devices are fully qualified and physically capable of climbing and working aloft. Decertify the individual if the initial evaluation exceeds the 90-day period.

A9.4.2. With exception of personnel identified in **A9.4.1.**, commanders will restrict climbing authorizations to structures that must be climbed to accomplish mission requirements. The allowable height of climbing is based on mission requirements. Document the limited climbing authorizations.

A9.4.3. Technicians in career fields that do not receive initial climbing training in an apprentice course will receive initial training from a qualified training certifier. Certification will be limited to the type of structures required to accomplish work center task requirements. See paragraph **A9.6.** for certification resources.

A9.4.4. Climbing training will be accomplished in increments of progressively higher heights using fall protection and restraint equipment. Once the trainee has demonstrated climbing confidence and

ability at the various heights, evaluate the individual without using fall protection equipment to a locally-determined training height.

A9.5. Recertification Procedures.

A9.5.1. Climbing recertification is an annual requirement.

A9.5.2. Personnel who have not climbed within the last 12 months require refresher training utilizing full fall protection and fall restraint devices.

A9.5.3. Annual recertification may be satisfied by demonstrating climbing proficiency anytime climbing is performed while completing actual job requirements or training events under supervision of a qualified certifier. Full fall protection is not required unless the individual has never received initial certification, exceeded the 12-month recertification period, or has been determined unqualified by the certifier.

A9.5.4. Decertify personnel not qualified to perform climbing tasks and restrict from climbing until recertified. The climbing instructor will determine the training requirements.

A9.6. Certification Resources. Installations without a climbing certifier will use an alternate source for climbing certification (i.e., local climbing courses, EI, Cable and Antenna Teams, SMT, etc.).

A9.7. Training Documentation. Document certification in the IMDS training subsystem.

A9.8. Climbing Certifier Requirements. Climbing certifier will:

A9.8.1. Complete climbing certification training.

A9.8.2. Be designated, in writing, by the commander to conduct climbing certification.

A9.8.3. Be current in cardiopulmonary resuscitation (CPR) and first aid training.

A9.8.4. Demonstrate ability to perform and teach complex tasks aloft.

A9.8.5. Be certified to train individuals in Pole Top Rescue.

A9.8.6. Use a training plan to conduct Pole Top Rescue and climbing certification.

A9.8.7. Maintain climbing proficiency and knowledge of current OSHA requirements.

A9.8.8. Determine and arrange for the specific safety equipment to use during performance evaluations.

A9.8.9. Provide and evaluate a written and/or oral knowledge test.

A9.8.10. Evaluate individuals during task preparation and performance.

A9.9. References. Refer to the following references for more detailed guidance related to climbing: TO 31W3-10-19C1, TO 31-10-3, and applicable OSHA and AFOSH Standards.

Attachment 10

MAINTENANCE MANAGEMENT TOOL KIT

A10.1. Purpose. This section provides samples of commonly used management tools.

A10.2. Work Center Orientation. The COM establishes an orientation program for newly assigned personnel according to paragraph **2.6.4.** The work center orientation program should augment rather than duplicate the unit orientation program. The contents should reflect the unit mission and requirements. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https://private.afca.af.mil/c-e_maint**.

   A10.2.1. Work Center Orientation - Sample Outline.

<div align="center">

Work Center Orientation

</div>

1. Purpose.

2. Organizational and Command Structure.

    a. Organizational Mission.

    b. Chain of Command.

3. Work center mission statement, organization and policies.

    a. Duty Hours.

    b. Recall Procedures.

    c. Leave Policy.

    d. Fitness Policy.

    e. Deployments.

    f. Test Equipment Management.

    g. Safety Briefing.

        (1) AFOSH Standards.

        (2) Complete AF Form 55, *Employee Safety and Health Record*.

        (3) Location of Safety Board/AF Form 457, *USAF Hazard Report*.

        (4) Local Work Center Hazards.

        (5) Disaster Preparedness.

    h. Maintenance Data Collection Documentation.

        (1) IMDS.

        (2) Manual Procedures.

    i. Vehicle Management (Operations/Maintenance/Checkout).

    j. Maintenance Operations Center.

       k.   Quality Assurance Responsibilities.

       l.   Materiel Control Responsibilities.

  4. Training/OJT.

       a.   Upgrade Training Requirements.

       b.   Career Development Course Process.

       c.   On-The-Job Training – Training Plan.

       d.   Use of AF Form 623/CFETP/AFJQS.

       e.   Ancillary Training Requirements.

  5. Local Procedures (supplements, MOIs, LMQCCs, etc.).

  6. Visit sites within the organization such as MOC, QA, production work centers, supported operations functions (i.e., air traffic control tower, network control center, and weather station).

  7. Obtain signatures of trainee and supervisor signifying orientation is completed.

A10.3. Maintenance Plan. The maintenance plan is a schedule of known or predicted future maintenance actions. The COM determines the frequency and content of the maintenance plan. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https://private.afca.af.mil/c-e_maint**.

A10.3.1. Recommended topics: deferred PMIs, TCTO schedule, scheduled mission downtime, preplanned and time change requirements, modification schedule, CSEP evaluations schedule, and overdue CSEP evaluations.

A10.3.2. Optional topics: scheduled PMIs, TMDE schedule, TO management information; maintenance training updates and reports, scheduled training courses, Materiel Control information, systems and equipment up-time rates, repair capability and self-sufficiency analysis, safety-related information, scheduled staff assistance visits and IG inspections, special interest items, crossfeed, status of AFTO Forms 22, SMR change requests, AF Forms 1067, *Modification Proposal*, recurring suspenses, and other relevant maintenance-related information.

A10.3.3. Maintenance Plan - Sample Outline. **Note:** Recommended items are indicated with an asterisk (*).

<center>**Maintenance Plan**</center>

  1. COM or Maintenance Superintendent.

       a.   Comments.

       b.   Focus Areas.

  2. Maintenance Operations Center (MOC).

       a.   MOC Comments.

       b.   Deferred PMIs. *

       c.   TCTO Schedule. *

    d. Scheduled Mission Downtime. *

    e. Preplanned and Time Change Requirements. *

    f. Modification Schedule. *

    g. Scheduled PMIs.

    h. Systems/Equipment Up-time Rates.

    i. Repair Capability.

    j. Self-sufficiency.

    k. JDD Procedures Review.

3. Quality Assurance (QA).

    a. QA Comments.

    b. CSEP Evaluations Schedule. *

       (1) Personnel Evaluations. *

       (2) Technical Evaluations. *

       (3) Managerial Evaluations. *

    c. Overdue CSEP Evaluations. *

    d. Status of AFTO Forms 22, SMR change requests, and AF Forms 1067.

4. Maintenance Training.

    a. Maintenance Training Reports.

       (1) COM Summary.

       (2) Training Visibility Ledger (TVL).

       (3) Ancillary Training Status.

    b. Scheduled Training Courses.

5. Material Control.

    a. Materiel Control Comments.

    b. TRN Procedures Review.

    c. DIFM Procedures Review.

6. Safety.

    a. Sample Job Safety Training Outline.

7. TODO Comments.

8. TMDE.

    a. TMDE Schedule.

    b. User/Owner Responsibilities.

9. Recurring Suspenses.

10. Crossfeed Information.

11. Special Interest Items.

12. Schedule of Staff Assistance Visits and IG Inspections.

A10.4. Deficiency Analysis Summary. Refer to paragraph **5.17.** for deficiency analysis procedures. QA personnel will focus their deficiency analysis efforts on identifying deficiency patterns, investigating, determining the underlying cause(s) of the deficiencies, and recommending management actions to correct the deficiencies. The summary will include the key elements and results of the analysis. Limit the summary contents to relevant information directly related to identified deficiencies. Refer to paragraph **A10.4.1.** for a Deficiency Analysis Summary sample. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https://private.afca.af.mil/c-e_maint**. *Note:* Reference AFJQS 2EXXX-201G, *Maintenance Support*, for deficiency analysis training.

   A10.4.1. Deficiency Analysis Summary - Sample.

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Deficiency Analysis Summary

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1. Purpose. The deficiency analysis summary provides managers, at all levels, with an analysis of the maintenance techniques used to ensure operational reliability of C-E equipment, the health and effectiveness of training programs, and the effectiveness of work center or staff function management practices. Deficiency analysis is the process of determining the real, underlying cause of deficiencies not found during all forms of evaluations, the maintenance process itself, or other sources.

2. Functional Area: Job Data Documentation (JDD).

   a. Trend or Deficiency: Four of nine personnel evaluations conducted during this summary period resulted in JDD errors. All four evaluations with JDD errors were from the radar maintenance work center. The types of errors included documenting inaccurate codes for When Discovered, Action Taken, How Mal and WUC.

   b. Impact: Inaccurate documentation undermines IMDS data integrity. Accurate data is needed for managers at all levels to make informed decisions to improve the equipment, program for spares, and to best allocate resources.

   c. Results of Analysis: A special evaluation concluded the radar maintenance work center personnel are not trained to perform JDD accurately. The work center supervisor is not trained to perform daily JDD reviews and weekly Maintenance Action Review Report (QBR) reviews, and has not appointed a work center MDC representative. The QBR indicated several JDD errors, but none were corrected. Further investigation revealed the monthly maintenance documentation review meeting was not held for the last 2 months. Failure to conduct the monthly review meetings contributed to the repeated errors in maintenance documentation.

   d. Corrective Action: The IMDS focal point provided JDD training to the work center personnel and JDD review procedures training with the work center supervisor. The work center supervisor appointed an MDC representative and scheduled training with the IMDS focal point.

    e. Recommended Management Action: Work center supervisor (with QA assistance) review the work center training plan to ensure appropriate level of training is provided prior to task qualification. Work center supervisor establishes internal controls to ensure daily JDD reviews and weekly QBR reviews are conducted. MOC re-evaluate priorities to ensure monthly maintenance documentation review meetings are conducted on time.

3. Functional Area: TMDE Management.

    a. Trend or Deficiency: The three managerial evaluations conducted this summary period indicated eight TMDE items were overdue calibration. The results of a sampling taken from all six maintenance work centers revealed an additional six TMDE items were overdue calibration. All 14 TMDE items overdue calibration were overdue less than 30 days.

    b. Impact: Using TMDE overdue calibration could result in inaccurate test results and alignments potentially degrading the mission and jeopardizing safety of flight.

    c. Results of Analysis: The primary unit TMDE coordinator was on emergency leave for 30 days. During the primary's absence, the alternate unit TMDE coordinator did not distribute calibration schedules and did not contact the work centers to coordinate TMDE pick-up and deliveries to PMEL. Further investigation revealed the alternate was not trained to perform unit TMDE coordinator duties. In addition, the work centers' technicians did not routinely check TMDE calibration dates prior to performing maintenance.

    d. Corrective Action: Work centers reviewed maintenance actions and identified the equipment maintained using the TMDE overdue calibration. The equipment was rechecked to ensure it met TO specifications. The unit TMDE coordinator requested priority support from PMEL to expedite support for the essential TMDE overdue calibration. The alternate unit TMDE coordinator was trained on TMDE responsibilities.

    e. Recommended Management Action: Schedule, conduct and document unit TMDE coordinator duties according to AFI 21-116.

4. Review previous deficiency analysis summary results to determine the effectiveness of the management actions taken to resolve the root cause(s) in error trends and deficiency patterns.

5. Compare current deficiency analysis results with previous summary results to identify similarities or recurring error trends or deficiency patterns.

Attachment 11

TEST, MEASUREMENT, AND DIAGNOSTIC EQUIPMENT (TMDE) COORDINATORS

A11.1. Introduction. TMDE is critical to proper operation and maintenance of mission systems. Out of tolerance TMDE can cause mission systems to be misaligned or erroneously declared unserviceable/serviceable. Man-hours and parts may be expended unnecessarily to restore serviceable equipment to new standards based on inaccurate TMDE readings. Personnel who use TMDE must understand their responsibilities and the procedures for the use and care of TMDE. Proper use, handling, storage, transportation, and calibration are essential to ensure TMDE accurately performs its function.

NOTE: Reference AFJQS 2EXXX-201P, *Work Center Test Equipment Management*, to accomplish task qualification training. AFMQCC 100-4, *Communications-Electronics (C-E) Care and Management of Test, Measurement and Diagnostic Equipment (TMDE)* provides references and checks to be reviewed when evaluating TMDE procedures.

A11.2. Unit Test, Measurement, and Diagnostic Equipment (TMDE) Coordinator Responsibilities.

A11.2.1. The unit TMDE coordinator is the liaison between the maintenance activity and PMEL. This does not preclude direct communications between the work center and PMEL technicians, but the TMDE coordinator must be aware of any problems in obtaining timely calibration and repair of critical TMDE assets to ensure mission accomplishment.

A11.2.2. Unit TMDE coordinators will:

A11.2.2.1. Accomplish the duties and responsibilities as listed in AFI 21-113 and TOs 00-20-14 and 33-1-27.

A11.2.2.2. Act as the focal point between the maintenance activity and PMEL for minimizing and resolving TMDE calibration and repair support problems.

A11.2.2.2.1. Arrange for orientation and training for work center TMDE monitors.

A11.2.2.2.2. Accompany the COM during visits to PMEL.

A11.2.2.2.3. Discuss unique requirements and TMDE support problems with PMEL, and resolve problems locally if possible.

A11.2.2.2.4. Keep the COM advised of PMEL support problems.

A11.2.2.2.5. Elevate problems with PMEL support that cannot be resolved at the local level, to the appropriate MAJCOM office for their resolution.

A11.2.2.3. Forward TMDE calibration schedules to appropriate work centers.

A11.2.2.4. Establish procedures for unit TMDE turn-in and pick-up.

A11.2.2.5. Verify the UND, FAD, and priority used are commensurate with the mission supported by the item when work centers order parts to support PMEL/user maintenance repairs.

A11.2.2.5.1. Validate that parts for TMDE can be ordered MICAP against the supported system, equipment SRD, or work center mission if a MICAP condition is verified.

A11.2.2.5.2. Follow up with PMEL on TMDE that is in AWP or EIP status for over 30 calendar days.

A11.2.2.6. Process requests for priority calibration or repair only when justified to meet urgent mission requirements.

A11.2.2.7. Assist work centers to determine if TMDE in other work centers is available and suitable for use rather than requesting extension of a calibration due date.

A11.2.2.8. Ensure all TMDE coded for RSP, War Readiness Materiel (WRM), or subject to deployment is reflected on the master inventory.

Attachment 12

CATEGORIES OF MAINTENANCE ORGANIZATIONS REQUIREMENTS TABLE

A12.1. Introduction. Categories of maintenance organizations are described in paragraph **1.7.** and **Chapter 3**. Use **Table A12.1.** to identify the specific requirements for each category.

Table A12.1. Categories of Maintenance Organizations Requirements. (An "X" indicates a mandatory requirement for the applicable category. Organizations may select additional mandatory requirements.)

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
1	ASSIGNED RESPONSIBILITIES				
2	**2.5.** Unit Commander. The unit commander will:	X	X	X	X
3	**2.5.1.** Ensure all personnel performing C-E maintenance (regardless of AFSC) follow the maintenance management requirements in **Attachment 8**.	X	X	X	X
4	**2.5.2.** Designate the COM and Maintenance Superintendent in writing.	X	X	X	
5	**2.5.3.** Require strict adherence to technical data and all other written management procedures.	X	X	X	X
6	**2.5.4.** Enforce sound maintenance, supply discipline, and financial management practices.	X	X	X	X
7	**2.5.5.** Ensure life cycle logistics support for unit acquired COTS systems and equipment according to **Chapter 10** of this instruction.	X	X	X	X
8	**2.5.6.** Designate, in writing, technicians authorized to perform Air Traffic Control and Landing Systems (ATCALS) facility certifications according to criteria established in paragraph **11.9.**	X	X	X	X
9	**2.5.7.** Identify structures that must be climbed for mission accomplishment and personnel required to maintain climbing proficiency (see **Attachment 9**).	X	X	X	X
10	**2.5.8.** Develop communication plans according to mission requirements and requirements identified in paragraph **1.4.**	X	X	X	X
11	**2.5.9.** Review and evaluate maintenance and training effectiveness with the COM, maintenance superintendent, MOC, QA, and maintenance supervisors quarterly using the deficiency analysis summary, maintenance training summary, and other relevant management products.	X	X		
12	**2.6.** Chief of Maintenance. As a minimum, the COM will:	X	X		
13	**2.6.1.** Ensure effective and timely use of the technical expertise and services available from CRAs and SMTs. Submit requests for assistance from these activities according to command directives.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
14	**2.6.2.** Implement management concepts and procedures for FSMAs. Delineate COM, maintenance staff, and FSMA management support duties.	X	X	X	
15	**2.6.3.** Manage civil service employees according to Office of Personnel Management and Air Force directives.	X	X	X	
16	**2.6.4.** Establish an orientation program for newly assigned personnel. The orientation program should augment rather than duplicate the unit orientation program. The program should provide a description of the mission(s); description and tour of maintenance staff and production work centers; description of individual duties and responsibilities; local policies (i.e., duty hours, leave, recall, safety, security, etc.); and other areas, as appropriate. See **Attachment 10** for a sample orientation plan. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https://private.afca.af.mil/c-e_maint**.	X	X	X	
17	**2.6.5.** Utilize ETS personnel in accordance with AFI 21-110.	X	X	X	
18	**2.6.6.** Temporarily realign duties to ensure efficient use of assigned manpower. Responsibility for task accomplishment remains within the specific function as defined in MAJCOM standardized organizational structures.	X	X	X	
19	**2.6.7.** Ensure QA participates in the acceptance and operational testing of new installations and systems.	X	X		
20	**2.6.8.** Appoint a unit TMDE coordinator, in writing, to perform responsibilities in **Attachment 11**. The COM may delegate unit TMDE coordinator responsibilities to the production work centers. If delegated, ensure the unit responsibilities in **Attachment 11** are performed.	X	X	X	
21	**2.6.9.** Establish close working relationships with base support activities. Periodic visits by the COM to supporting activities such as the PMEL, chief of supply, contracting, and BCE are recommended. Focus these visits on how the communications maintenance activity and other supporting activities can jointly work toward improved support of the unit's mission.	X	X	X	
22	**2.6.10.** Ensure procedures are established for security, control and accountability of tools. Refer to paragraph **1.18.** for tool management guidelines.	X	X	X	
23	**2.6.11.** Ensure a depot level maintenance submission program is established for assigned equipment according to TO 00-25-108.	X	X	X	
24	**2.6.12.** Ensure procedures for the repair/service of warranted items are established according to AFMAN 23-110, TO 00-35D-54 and other applicable directives.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
25	**2.6.13.** Ensure installation project packages are reviewed for feasibility of installation and continued validity of the requirements. This includes providing tools, test equipment, and support to work teams as required by the installation package or when needed to preclude work stoppages.	X	X	X	
26	**2.6.14.** Ensure TCTO modification kits are provided to installation teams for compliance during installation of new systems.	X	X	X	
27	**2.6.15.** Ensure a maintenance plan is published as least quarterly. **Attachment 10** includes a list of mandatory items and a sample maintenance plan outline. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https://private.afca.af.mil/ c-e_maint**.	X	X		
28	**2.6.16.** Publish policy, guidance and procedures for the maintenance complex.	X	X	X	
29	**2.6.16.1.** Develop and approve an MOI to delineate maintenance responsibilities. The COM approves QA-validated MOIs for publication and use by signing the title page.	X	X	X	
30	**2.6.16.2.** Approve and publish validated LWCs prior to use. The COM approves QA-validated LWC, AFTO Forms 26D for publication and use by signing the LWC title page.	X	X	X	
31	**2.6.17.** Ensure life cycle logistics support plans are developed and implemented for unit acquired COTS systems and equipment according to **Chapter 10** of this instruction.	X	X	X	
32	**2.6.18.** Ensure effective training programs are established in work center, Materiel Control, MOC, QA and other assigned maintenance staff functions. With exception of Materiel Control, the tasks performed in the staff functions do not lead to the award of an AFSC skill level, so all personnel, including supervisors, must receive training on the duties of their assigned staff function. Identify training requirements and document their completion according to applicable training instructions, CFETPs, AFJQSs, and local JQSs.	X	X	X	
33	**2.6.19.** Ensure effective safety and radiation protection practices are established according to AFOSHSTD 48-series, AFOSHSTD 91-series, and TO 31Z-10-4, Appendix A.	X	X	X	
34	**2.6.20.** Initiate corrective action to resolve management, system and equipment deficiencies.	X	X	X	
35	**2.6.21.** Include maintenance requirements for mission support in plans, programs and support agreements.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
36	**2.6.22.** Develop procedures to execute maintenance tasks listed in war and mobilization plans, disaster preparedness plans and programming documents. Develop procedures to execute local deployment requirements to include pre- and postdeployment requirements. Ensure personnel are trained to accomplish these tasks.	X	X	X	
37	**2.6.23.** Identify factors which limit (or can limit) the capability of the maintenance activity to meet its mission requirements to appropriate agencies.	X	X	X	
38	**2.6.24.** Evaluate system and equipment installations, complete customer questionnaires, and return them to the installation activity. Provide meaningful comments and specific examples when dissatisfied with the service provided.	X	X	X	
39	**2.6.25.** Ensure prudent management, control, storage, and cost-effective use of government property under their jurisdiction according to AFI 23-111.	X	X	X	
40	**2.6.26.** Act as approval authority for cannibalization requests. The COM may delegate cannibalization approval. NOTE: The CSO has approval authority for mission critical computer hardware.	X	X	X	
41	**2.6.27.** Provide MAJCOM and Air Force with accurate visibility of equipment assets and training status in IMDS by ensuring equipment and mission status, maintenance documentation, and training data are current.	X	X	X	
42	**2.6.28.** Ensure review of IMDS maintenance documentation is conducted and errors are corrected.	X	X	X	
43	**2.6.29.** Coordinate actions that impact airfield operations with the local Airfield Operations Flight (AOF) Commander or equivalent level of authority.	X	X	X	
44	**2.6.30.** Act as approving authority of requests for use of on-line, operational systems to test or verify serviceability of parts, such as supply point assets.	X	X	X	
45	**2.6.31.** Review the status of maintenance training programs monthly.	X	X	X	
46	**2.6.32.** Review and evaluate maintenance performance and training effectiveness with the commander, maintenance superintendent, MOC, QA, and maintenance supervisors quarterly using the deficiency analysis summary, maintenance training summary, and other relevant management products.	X	X		
47	**2.6.33.** Review CSEP personnel evaluation reports that document unsatisfactory task results.	X	X	X	
48	**2.6.34.** Ensure antenna system are managed according to **Attachment 7**.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
49	**2.7.** AEF and Mobility Response Actions. In-garrison maintenance functions are key to ensuring sustained operational readiness in the deployed environment. Units with strong in-garrison maintenance practices can expect to be highly successful when deployed. Regardless of unit structure, the COM has overall responsibility for ensuring technicians adhere to maintenance management principles. Maintenance managers at all levels are responsible for ensuring personnel comply with established guidance.	X	X	X	
50	**2.7.1.** The COM will take the following predeployment actions when the unit receives a mission tasking order: NOTE: Refer to **Chapter 8** for deployed maintenance management procedures.	X	X	X	
51	**2.7.1.1.** Determine the support that can be provided by the parent unit, deploying unit, and host unit for the contingency operation or exercise prior to deployment.	X	X	X	
52	**2.7.1.2.** Ensure communications planning requirements are accomplished prior to deployments. This function must:	X	X	X	
53	**2.7.1.2.1.** Plan and coordinate maintenance tasks and support needed to fulfill mobility requirements.	X	X	X	
54	**2.7.1.2.2.** Consolidate maintenance inputs for host-tenant, interservice and interagency agreements, and for letters of agreement used in support of deployed forces.	X	X	X	
55	**2.7.1.2.3.** Coordinate with installation spectrum managers to ensure RF emitters meet spectrum requirements (i.e., equipment is spectrum certified, has host nation support, frequency authorization, etc.). Refer to AFI 33-118, Radio Frequency (RF) Spectrum Management, for additional guidance.	X	X	X	
56	**2.7.1.3.** Coordinate sharing of skills and resources across the unit.	X	X	X	
57	**2.8.** Maintenance Superintendents. Maintenance superintendents provide an experienced managerial and technical perspective to the maintenance activity by advising and assisting the COM. The superintendent performs as an advisor, teacher and confidant to maintenance personnel. A maintenance activity with an enlisted COM is not authorized a maintenance superintendent. Exception: MAJCOMs may authorize a maintenance superintendent when warranted. Maintenance Superintendents will:	X	X		
58	**2.8.1.** Advise and assist the COM, staff, and work center supervisors in managing and administering maintenance programs. Maintenance superintendents must promote a free exchange of ideas and encourage supervisors to seek help when needed. To ensure effectiveness, maintenance superintendents do not normally supervise personnel or work centers.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
59	**2.8.2.** Perform as the COM when required.	X	X		
60	**2.8.3.** Familiarize themselves with and make frequent visits to all maintenance functions.	X	X		
61	**2.8.4.** Control personnel assignment within the maintenance activity and advise the COM on manning levels. Ensure each work center receives equitable manpower in terms of numbers and skills.	X	X		
62	**2.8.5.** Provide advice concerning morale and welfare to maintenance personnel.	X	X		
63	**2.8.6.** Promote a close working relationship between staff functions and work center supervisors.	X	X		
64	**2.9.** Maintenance Supervisors and Branch Chiefs. Maintenance supervisors, also called branch chiefs, perform intermediate level supervision when the size or number of work centers preclude direct supervision by the COM. The maintenance supervisor performs as an extension of the COM by supervising several work centers. To ensure an effective supervisory span of control, some units may need a number of maintenance supervisors. Maintenance supervisors are directly responsible to the COM and will:	X	X		
65	**2.9.1.** Frequently visit each work center and systems operating location.	X	X		
66	**2.9.2.** Know the capabilities and limitations of their work centers.	X	X		
67	**2.9.3.** Ensure work center supervisors have a thorough knowledge of their duties and comply with applicable directives and TOs.	X	X		
68	**2.9.4.** Ensure compliance with maintenance schedules.	X	X		
69	**2.9.5.** Emphasize quality and safety.	X	X		
70	**2.9.6.** Ensure upgrade training and maintenance OJT training programs are established and effectively managed.	X	X		
71	**2.9.7.** Ensure observed or reported training deficiencies are corrected.	X	X		
72	**2.9.8.** Ensure work centers assist each other when additional skills or resources are required.	X	X		
73	**2.9.9.** Ensure maintenance data and analysis products are used to solve problems and improve the maintenance effort.	X	X		
74	**2.9.10.** Maintain a close liaison with the maintenance staff.	X	X		
75	**2.9.11.** Inform the COM of problems that are beyond the capability to solve at the branch level.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
76	CATEGORIES OF MAINTENANCE ORGANIZATIONS				
77	**3.3.1.** Category I (Large) Maintenance Organization. The functions, responsibilities and procedures for this type of organization are all those identified in this instruction.	X			
78	**3.3.2.** Category II (Medium) Maintenance Organization.		X		
79	**3.3.2.1.1.** Organizations with separated maintenance staff functions will perform all duties identified in this instruction.		X		
80	**3.3.2.1.2.** For organizations with a consolidated staff:		X		
81	**3.3.2.1.2.1.** The COM will:		X		
82	**3.3.2.1.2.1.1.** Perform duties according to paragraph **2.6.** this attachment.		X		
83	**3.3.2.1.2.1.2.** Establish focal points across the organization to perform some of the maintenance staff responsibilities. The intent is to balance the workload between the consolidated staff and the production work centers. Publish an MOI and use appointment letters (when appropriate) to delineate and assign some or all of the following responsibilities:		X		
84	**3.3.2.1.2.1.2.1.** Vehicle management (see **Chapter 4**).		X		
85	**3.3.2.1.2.1.2.2.** IMDS focal point duties (see **Chapter 4**).		X		
86	**3.3.2.1.2.1.2.3.** Technical publications program (see **Chapter 5**).		X		
87	**3.3.2.1.2.1.2.4.** Corrosion prevention and control program (see **Chapter 5**).		X		
88	**3.3.2.1.2.1.2.5.** Logistics support program (see **Chapter 5**).		X		
89	**3.3.2.1.2.1.2.6.** Maintenance training management (see **Chapter 5**).		X		
90	**3.3.2.1.2.2.** The consolidated maintenance staff will:		X		
91	**3.3.2.1.2.2.1.** Perform MOC responsibilities (see **Chapter 4**) with the exception of COM-assigned focal point duties.		X		
92	**3.3.2.1.2.2.2.** Perform QA duties (see **Chapter 5**) with the exception of COM-assigned focal point duties.		X		
93	**3.3.2.1.2.3.** Work center personnel will perform work center responsibilities according to **Chapter 7** and this attachment.		X		
94	**3.3.3.** Category III (Small) Maintenance Organization.			X	
95	**3.3.3.4.** MAJCOMs will:			X	
96	**3.3.3.4.1.** Develop and publish CSEP policy best suited for the assigned Category III organizations. Use the concepts and procedures in **Chapter 5** as a guide to develop CSEP policy; however, include the mandatory items listed in this attachment.			X	
97	**3.3.3.5.** COM will:			X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
98	**3.3.3.5.1.** Perform duties according to paragraph **2.6.** this attachment.			X	
99	**3.3.3.5.2.** Establish focal points to perform the minimum necessary maintenance staff duties and responsibilities. Publish an MOI and use appointment letters (when appropriate) to delineate and assign the following responsibilities:			X	
100	**3.3.3.5.2.1.** IMDS focal point duties (see **Chapter 4**).			X	
101	**3.3.3.5.2.2.** Technical publications program (see **Chapter 5**).			X	
102	**3.3.3.5.2.3.** Process material and TO deficiencies (see **Chapter 5**).			X	
103	**3.3.3.5.2.4.** Perform technical reviews of modification proposals and process valid proposals (see **Chapter 5**).			X	
104	**3.3.3.5.2.5.** Corrosion prevention and control program (see **Chapter 5**).			X	
105	**3.3.3.5.2.6.** Maintenance training management (see **Chapter 5**).			X	
106	**3.3.3.5.2.7.** AEF and mobility response actions (see **Chapter 4** and **Chapter 5**).			X	
107	**3.3.3.5.3.** Review NRTS actions to ensure appropriate action has been taken to repair the assets locally.			X	
108	**3.3.3.5.4.** Be the approving authority for all cannibalization actions.			X	
109	**3.3.3.5.5.** Establish written restoral criteria in coordination with user/ operations personnel.			X	
110	**3.3.3.6.** Work center personnel will:			X	
111	**3.3.3.6.1.** Perform work center responsibilities according to **Chapter 7** and this attachment.			X	
112	**3.3.3.6.2.** Perform MOC responsibilities according to this instruction. Do not duplicate responsibilities of COM-assigned focal points.			X	
113	**3.3.4.** Category IV Functionally Supported Maintenance Activity (FSMA). FSMAs are not self-sufficient; they are managed by a maintenance supervisor and perform only those staff responsibilities, which, because of their nature, should be done locally. When maintenance staff personnel are assigned to a FSMA, they will augment rather than duplicate the COM staff. The remaining staff functions and responsibilities are done within the parent maintenance activity. The parent unit COM will establish policy and procedures on adhering to the guidance in this instruction. Refer to this attachment for Category IV requirements from **Chapter 2** - **Chapter 5**.				X
114	**3.3.4.1.** Units with FSMAs assigned will publish detailed guidance, either an MOI or MOA, to clearly define functional responsibilities for supported activities. As a minimum, the MOI or MOA will address MOC, training, TO management and CSEP evaluations.	X	X	X	X

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
115	**3.3.4.2.** Maintenance staff functions that can be effectively performed by the COM staff will not be performed at the FSMA.	X	X	X	X
116	**3.3.4.3.** At a minimum, the FSMA maintenance supervisors will:				X
117	**3.3.4.3.1.** Frequently visit each work center and systems operating location.				X
118	**3.3.4.3.2.** Know the capabilities and limitations of their work centers.				X
119	**3.3.4.3.3.** Ensure work center supervisors have a thorough knowledge of their duties and comply with applicable directives and TOs.				X
120	**3.3.4.3.4.** Ensure compliance with maintenance schedules.				X
121	**3.3.4.3.5.** Emphasize quality and safety.				X
122	**3.3.4.3.6.** Ensure upgrade training and maintenance OJT training programs are established and effectively managed.				X
123	**3.3.4.3.7.** Ensure observed or reported training deficiencies are corrected.				X
124	**3.3.4.3.8.** Ensure work centers assist each other when additional skills or resources are required.				X
125	**3.3.4.3.9.** Ensure maintenance data and analysis products are used to solve problems and improve the maintenance effort.				X
126	**3.3.4.3.10.** Maintain a close liaison with the maintenance staff.				X
127	**3.3.4.3.11.** Inform the COM of problems that are beyond the capability to solve at the FSMA.				X
128	MAINTENANCE OPERATIONS CENTER (MOC)				
129	**4.2.** Maintenance Operations Center (MOC) Supervisor Responsibilities. The MOC supervisor will:	X	X		
130	**4.2.1.** Be thoroughly knowledgeable of MOC responsibilities and procedures.	X	X		
131	**4.2.2.** Monitor and direct the maintenance production effort.	X	X		
132	**4.2.2.1.** Ensure support is scheduled, monitored, controlled, and coordinated for maintenance production; perform database management duties, as necessary; and plan and schedule the use of maintenance resources.	X	X		
133	**4.2.2.2.** Assemble, collate and assess significant maintenance information and requirements to enhance the maintenance production effort.	X	X		
134	**4.2.3.** Ensure accomplishment of MOC responsibilities.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
135	**4.2.4.** Publish a maintenance plan at least quarterly. Coordinate with other staff functions and work centers to obtain maintenance planning information. **Attachment 10** includes a list of mandatory items and a sample maintenance plan outline. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https://private.afca.af.mil/c-e_maint**. Although the maintenance plan is predominantly a MOC function, the COM can assign the maintenance plan responsibility to another section. In addition, the COM can choose to combine the maintenance plan with other reports and summaries.	X	X		
136	**4.2.5.** Ensure MOC personnel are trained on duties, responsibilities and procedures.	X	X		
137	**4.2.6.** Establish an approximate tour length for personnel assigned to the MOC function. Tour lengths must consider the unit mission and the need for personnel to remain technically proficient in their duty AFSC.	X	X		
138	**4.2.7.** Develop procedures to sustain MOC operations in the event of power failure, communications outages, etc.	X	X		
139	**4.2.8.** Provide the COM and maintenance superintendent an initial orientation of MOC responsibilities and procedures.	X	X		
140	**4.3.** MOC Personnel. MOC personnel must be:	X	X		
141	**4.3.1.** Qualified on at least one of the communications systems maintained. NOTE: The COM may waive this requirement for short tour assignments and DOD civilian and contractor personnel.	X	X		
142	**4.3.2.** Able to evaluate maintenance requirements and direct timely corrective actions with the assistance from the maintenance work centers.	X	X		
143	**4.3.3.** Possess a 5-skill level or higher. Do not assign 3-skill level personnel except on a case-by-case basis.	X	X		
144	**4.4.** MOC Training Programs. MOC training programs provide assigned personnel with a thorough understanding of MOC duties, responsibilities and procedures.	X	X		
145	**4.4.1.** MOC personnel will accomplish AFJQS 2EXXX-201F and other applicable AFJQSs (e.g., IMDS and Database Managers) training resources for task qualification and duty position training. NOTE: AFJQS 2EXXX-201EA will replace AFJQS2EXXX-201E and AFJQS 2EXXX-201EB.	X	X	X	
146	**4.4.2.** MOC training programs will provide:	X	X		
147	**4.4.2.1.** An orientation briefing to promote an understanding of the unit's mission and the systems installed and maintained to accomplish that mission.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
148	**4.4.2.2.** Visits to maintenance production work centers, staff offices, and supported operations functions, such as the air traffic control tower, network control center, and weather station.	X	X		
149	**4.4.2.3.** An overview of the functions and capabilities of support organizations, such as PMEL and base supply.	X	X		
150	**4.4.2.4.** A working knowledge of radio procedures and communications discipline.	X	X		
151	**4.4.2.5.** The knowledge of contractor maintained systems and the procedures to call out the appropriate vendor.	X	X		
152	**4.5.** MOC Responsibilities.	X	X		
153	**4.5.1.** Control all maintenance actions that cause an equipment status report. The COM may direct MOC to track non-ESR reportable equipment.	X	X		
154	**4.5.2.** When directed, act as a consolidated contact point to receive trouble reports and complaints from supported customers. Consolidating some or all contact points is a local determination. In all cases, it is essential for customers and users to know how and whom to contact when they experience C-E systems' problems.	X	X		
155	**4.5.2.1.** Consolidated contact points appear as a single telephone number to affected customers. Ensure adequate telephone lines are available to minimize customer delays in reaching the trouble reporting number.	X	X		
156	**4.5.2.2.** If functioning as a consolidated contact point, the MOC must be able to transfer trouble calls and establish conference calls.	X	X		
157	**4.5.3.** Establish an after duty hours contact point to perform MOC duties when a 24-hour MOC is not utilized. Provide detailed written procedures for the after duty hours function. Make this activity or individual available to the customers through the trouble reporting point telephone number, if established.	X	X		
158	**4.5.3.1.** Ensure the unit commander approves the use of an activity or individual to perform after duty hours MOC duties, unless the activity or individual is already aligned under the COM.	X	X		
159	**4.5.3.2.** Ensure MOC personnel accomplish the following tasks when transferring MOC responsibilities to a new shift for 24-hour MOCs or to the after duty MOC:	X	X		
160	**4.5.3.2.1.** Update the status of all open jobs.	X	X		
161	**4.5.3.2.2.** Brief the next shift for 24 hour operations or the after duty hours MOC activity on the status of all open jobs, scheduled actions, and situations that could affect the maintenance mission.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
162	**4.5.3.2.3.** Review all open jobs for accuracy when responsibility is returned to the MOC.	X	X		
163	**4.5.3.2.4.** Maintain a log of MOC actions. The log content will contain the minimum data necessary to accomplish system or equipment status reporting.	X	X		
164	**4.5.3.2.5.** Have a current copy of all local procedures required to perform MOC duties.	X	X		
165	**4.5.4.** Maintain status visibility. Automated status visibility programs are encouraged.	X	X	X	
166	**4.5.5.** Document and report system or equipment status according to AFI 21-103 and command directives.	X	X	X	
167	**4.5.5.1.** Enter and update ESR data as events occur.	X	X	X	
168	**4.5.5.2.** Review IMDS management products (i.e., C-E Open Incident List, C-E Status Summary, etc.) for accuracy to ensure a usable product for analysis and management. Reference AFCSM 21-560, Volume 2, for IMDS management product descriptions and format options.	X	X	X	
169	**4.5.5.3.** Correct ESR errors. NOTE: ESR corrections are limited to the previous 33-day time period.	X	X	X	
170	**4.5.5.4.** Maintain a current inventory of all mission critical end items and reportable missions, to include COTS items, maintained by the unit. Use the IMDS C-E Equipment Inventory List, C-E Mission Correlation List, and other listings as appropriate to document the inventory.	X	X	X	X
171	**4.5.6.** Monitor the status of assigned maintenance vehicles, unless otherwise directed by the commander or COM.	X	X		
172	**4.5.6.1.** Monitor the dispatch and operational status of vehicles assigned to the organization. Operational status will reflect vehicle type, serial number, where assigned, if radio equipped, condition (in or out of service), and remarks. Vehicle users report status changes to the MOC. GSUs may report vehicle status to the MOC.	X	X		
173	**4.5.6.2.** Advise the MOC supervisor when vehicles do not adequately support maintenance production.	X	X		
174	**4.5.6.3.** Maintain an off base dispatch status display or log showing the driver's or team chief's name, time out, and destination. GSUs may maintain their own dispatch status. The COM will coordinate with the base vehicle operations office to determine off-base work locations that do not require dispatch monitoring.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
175	**4.5.6.4.** Establish procedures to control the use of vehicles shared by more than one work center or designated for priority requirements. If the unit vehicle control activity publishes appropriate guidance, then MOC procedures are not required.	X	X		
176	**4.5.7.** Maintain the status of on-call technicians and dispatch them as required.	X	X		
177	**4.5.8.** Direct and control authorized cannibalization actions according to TO 00-20-2.	X	X	X	
178	**4.5.8.1.** Ensure a demand is placed on the supply system to verify the part is not available before resorting to a cannibalization action.	X	X	X	
179	**4.5.8.2.** When cannibalization is the only option available, identify the end item to be cannibalized, and request approval to cannibalize from the COM or designated representative. NOTE: The CSO has approval authority for mission critical computer hardware.	X	X	X	
180	**4.5.8.3.** Document cannibalization actions using appropriate IMDS screens.	X	X	X	
181	**4.5.8.4.** Approved cannibalization actions are directed and controlled by the MOC and documented by the work center. Materiel Control uses AF Form 2414, (or automated document) to document cannibalization actions related to MICAP incidents.	X	X	X	
182	**4.5.8.5.** For approved cannibalization actions, the MOC initiates a new job control number (JCN), against the item to be cannibalized, and directs the cannibalization action.	X	X	X	
183	**4.5.8.6.** When the removal action is done, the MOC annotates a comment/ follow-up against the appropriate job and inputs an IMDS comment transaction. The MOC will defer the job for the cannibalized end item pending receipt of the replacement part.	X	X	X	
184	**4.5.9.** Assign all JCNs. Blocks of JCNs may be assigned to work centers. Units using IMDS may use manual or automatic JCN assignments. If IMDS manual JCNs are used, contact the host database manager and obtain a block of JCNs for unit use. The construction, assignment, and use of JCNs are shown in TO 00-20-2.	X	X		
185	**4.5.9.1.** The JCN serves as a unique identifier for each job. Once a JCN is assigned to a job, the same JCN is carried until the job is completed, regardless of whether control of the JCN changes between the MOC and the work center.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
186	**4.5.9.2.** Blocks of local JCNs may be allocated to work centers for work that does not require control by the MOC. When a work center controlled maintenance action changes the system or equipment status, the JCN and control of the maintenance effort reverts to the MOC.	X	X		
187	**4.5.10.** Verify supply requirements when Materiel Control personnel are not available. The MOC supervisor may require on-call Materiel Control support after normal duty hours.	X	X		
188	**4.5.11.** Verify UND with Materiel Control.	X	X		
189	**4.5.12.** Notify affected activities of changes in priorities, plans, and schedules.	X	X		
190	**4.5.13.** Assist work centers in developing request for depot maintenance assistance according to TO 00-25-108.	X	X		
191	**4.5.14.** Coordinate anticipated mission downtime with the appropriate mission customer or activity and the affected maintenance work center. Coordination may be delegated to the appropriate work center.	X	X		
192	**4.5.15.** Use IMDS to initiate and control maintenance actions that change equipment status. Use locally generated means if IMDS is temporarily unavailable.	X	X		
193	**4.5.16.** Prepare and maintain a master PMI schedule. Send the applicable PMI schedule, annotated with JCNs, to the work centers, or use IMDS auto scheduling.	X	X	X	
194	**4.5.17.** Notify the performing work centers for scheduled TCTOs, time change items and other anticipated maintenance actions which require TO 00-20-series documentation.	X	X		
195	**4.5.18.** Maintain a list of system and equipment identification numbers, local standard reporting designator, and local serial numbers, when necessary. Comply with IMDS requirements for the management and control of the inventory portion of the IMDS C-E Equipment Status and Inventory Reporting Subsystem.	X	X	X	
196	**4.5.19.** Maintain the status of all active and deferred discrepancies. Reconcile deferred discrepancies, JCNs in AWP status, with Materiel Control. Enter required comments, such as requests for command assistance, into IMDS. Reconciliation information includes a review of the current status, acceptability of the EDD and verification of the UJC.	X	X	X	
197	**4.5.20.** IMDS and REMIS serve as the record copy for both ESR and non-ESR systems. Units without IMDS retain a copy of the locally generated documentation.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
198	**4.5.21.** Accomplish TCTO processing. Refer to **Attachment 13** for additional information.	X	X	X	
199	**4.5.22.** Notify the COM when the customer is not satisfied with the corrective action or responsiveness.	X	X	X	X
200	**4.5.23.** MOC personnel (or Maintenance Data Systems Analyst if assigned) serve as the IMDS focal point for all IMDS database issues. The IMDS focal point will:	X	X		
201	**4.5.23.1.** Comply with host database policies for background processing. Ensure all IMDS products needed by the unit are received on time and include the proper data.	X	X	X	
202	**4.5.23.2.** Coordinate with the host database manager to ensure C-E CAMS/ REMIS Reconciliation Program (NSF5B0) and Delete History are processed monthly. Ensure 5B0 errors are corrected and REMIS is updated prior to processing Delete History.	X	X	X	
203	**4.5.23.3.** Coordinate with the host database manager to correct processing problems or suspected software problems including correction of REMIS errors to ensure its database accurately reflects the local IMDS database.	X	X	X	
204	**4.5.23.4.** Coordinate with the host database manager when off-line/pseudo processing is required.	X	X	X	
205	**4.5.23.5.** Notify work centers of scheduled IMDS system downtime and outages.	X	X	X	
206	**4.5.23.6.** Use manual backup procedures according to AFI 21-103 and AFCSM 21-556 Volume 2.	X	X	X	
207	**4.5.23.7.** Assign local work center codes and mnemonics according to TO 00-20-2.	X	X	X	
208	**4.5.23.8.** Provide guidance to work center supervisors to ensure maintenance data accuracy, timeliness and correction of errors.	X	X	X	
209	**4.5.23.9.** Coordinate with the IMDS host database manager to process IMDS TRIC Code: QBR (Maintenance Action Review Report). Distribute products to work center representatives for maintenance documentation review and error correction. NOTE: JDD corrections are limited to the previous 10-day time period.	X	X	X	
210	**4.5.23.10.** Consolidate work center maintenance documentation errors to identify trends.	X	X		
211	**4.5.23.11.** Meet with all work centers' MDC representatives monthly to review trends in maintenance documentation errors and establish corrective actions.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
212	**4.5.23.12.** Perform C-E maintenance status and inventory reporting procedures according to AFI 21-103. NOTE: ESR corrections are limited to the previous 33-day time period.	X	X	X	
213	**4.5.23.13.** Use IMDS management products to ensure accurate equipment inventories, maintenance data documentation, and ESR (i.e., C-E Equipment Inventory List, C-E Open Incident List, C-E Status Summary, etc.). Reference AFCSM 21-560, Volume 2 for IMDS management product descriptions and format options.	X	X	X	X
214	**4.5.24.** Ensure antenna systems are managed according to **Attachment 7**.	X	X	X	X
215	**4.6.** Control of Maintenance. The MOC controls and documents the status of all active jobs that change equipment status. Active jobs are defined as those jobs where work is in progress or those jobs scheduled to be done that day. Jobs will be considered active even though routine delays may cause breaks in the normal work schedule.	X	X		
216	**4.6.1.** Follow the input formats in AFCSM 21-556, Volume 2, through 21-579, Volume 2, for IMDS and the reporting criteria of AFI 21-103 and/ or command directives for processing ESR information.	X	X		
217	**4.6.2.** The MOC controls all scheduled actions that cause a change in system or equipment status. For these actions, the MOC will:	X	X		
218	**4.6.2.1.** Coordinate status changes with all concerned agencies. With COM concurrence, this coordination may be done by the tasked work center. Include coordination procedures in local directives. Coordination includes the start time and ETRO. ETIC, as used in IMDS, is the same as ETRO.	X	X		
219	**4.6.2.2.** Coordinate deferred PMIs with the maintenance work center and using activities to ensure inspections are completed as soon as possible after the cause for deferment is resolved.	X	X		
220	**4.6.2.3.** Obtain new ETROs when the established ETRO cannot be met.	X	X		
221	**4.6.3.** The MOC provides customers with directions on how to report deficiencies with communications-computer systems.	X	X		
222	**4.6.4.** The MOC controls all unscheduled maintenance actions if the status of a mission or mission system is affected. The MOC will:	X	X		
223	**4.6.4.1.** Report all problems to the appropriate maintenance work center or unit OPR.	X	X		
224	**4.6.4.2.** Maintain a list of unit OPRs for contractor maintained or contractor operated communications systems.	X	X		
225	**4.6.4.3.** Establish local procedures (i.e., trouble log, shift log, etc.) to document significant events and customer reported jobs that do not require an entry into IMDS.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
226	**4.6.4.4.** Coordinate response/action on problems which affect equipment status with the customer and the appropriate work center or unit OPR capable of resolving the problem. The MOC will:	X	X		
227	**4.6.4.4.1.** Obtain information required for IMDS or local documentation entries.	X	X		
228	**4.6.4.4.2.** Obtain a preliminary ETRO. If corrective action cannot begin immediately due to higher priority maintenance or established restoration criteria, ensure the customer understands and is agreeable to the delay. If necessary, the COM will resolve any disagreement.	X	X		
229	**4.6.4.4.3.** Request applicable OPRs notify the MOC when such problems are resolved, even if resolved by functions outside of the maintenance activity.	X	X		
230	**4.6.4.4.4.** Follow up with the work center or unit OPR if the job is not completed by the established ETRO and advise the customer of the delay.	X	X		
231	**4.6.4.5.** Ensure, after a job is assigned to a work center, the work center coordinates directly with other work centers to correct the problem. The MOC must update IMDS or the trouble log if primary responsibility to correct the problem is shifted from one work center to another.	X	X		
232	**4.6.5.** The MOC inputs the maintenance event and status of jobs that change equipment status into IMDS. When real-time IMDS direct input is not possible, use the IMDS printout or a locally developed system to record required data until it can be entered into IMDS.	X	X		
233	**4.6.5.1.** When IMDS direct input is not possible and a PMI requires ESR reporting, show completion on the preventive maintenance schedule.	X	X		
234	**4.6.5.2.** When the PMI schedule is used for this purpose, show the start and stop times.	X	X		
235	**4.6.5.3.** Document deviations to the schedule in enough detail to explain why the action could not be performed.	X	X		
236	**4.6.6.** Note that control normally begins when a customer, user, or operator identifies a problem and the MOC assigns a JCN. In some cases, such as for critical command and control systems, the MOC may not learn of the problem until after operating or using personnel have notified the maintenance work center and restoral work has begun. Where the unit commander authorizes critical systems operators to notify the maintenance work center first and the MOC second, the MOC initiates control, reporting, and status-keeping procedures as soon as the malfunction is verified.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
237	**4.7.** Administrative Telephone Service Outages. When the COM has telephone maintenance responsibility, customers with telephone outages normally contact the telephone test board (or Help Desk) directly. As an alternative, they may be connected to the telephone test board attendant through the MOC.	X	X		
238	**4.7.1.** When a test board is installed and attended, test board attendants use AF IMT 2447, or an equivalent automated capability to control maintenance actions.	X	X		
239	**4.7.2.** When the test board is unattended, the MOC completes AF IMT 2447 or automated equivalent and passes it to the test board attendant the next duty day. If priority restoration is needed, the MOC directs the maintenance action.	X	X		
240	**4.7.3.** When a test board is not installed, the MOC receives telephone service complaints, logs the trouble, and directs the maintenance action.	X	X		
241	**4.7.4.** If telephone service is provided by contract and the MOC acts as a consolidated contact point for administrative telephone outages, the MOC will:	X	X		
242	**4.7.4.1.** Transfer the call to the contractor trouble desk or provides pertinent information to the contractor. NOTE: If the contractor is not required to notify either the customer or the MOC when service is restored, MOC may be directed to follow-up with the customer until service is restored.	X	X		
243	**4.7.4.2.** Notify the contract QAE when excessive restoral delays occur or if the customer is not satisfied with corrective action.	X	X		
244	**4.8.** Job Priorities. Job priorities ensure resources are allocated according to job importance and mission requirements and are related to established system, equipment, and circuit restoral criteria.	X	X	X	
245	**4.8.1.** Use the circuit restoral priorities assigned by the Telecommunications Service Priority to establish restoral criteria for DISA circuits and associated equipment. The priority for each DISA circuit appears on its corresponding TSO. This ensures circuits and supporting systems and equipment are restored according to national communications objectives.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
246	**4.8.2.** Note that this does not mean each system, piece of equipment, and circuit is listed in absolute priority order, but the criteria provides the MOC a means to determine their relative priority. The MOC uses the restoral criteria to assign priorities when an urgent need exists or when competition for resources occurs. Job priorities govern the sequence of work to be done and the distribution of tasks in and between work centers. Work centers assign job priorities to jobs under their control. When priorities are unclear, mission impacts are used to determine the priority.	X	X	X	
247	**4.9.** Preplanned and Time Change Procedures. QA notifies the MOC when a preplanned or time change action is required. The MOC establishes a method to ensure advance notice is provided to Materiel Control so items are on hand prior to scheduled replacement dates.	X	X		
248	**4.10.** AEF and Mobility Response Actions. The MOC will take the following predeployment actions when the unit receives a mission tasking order: NOTE: Refer to **Chapter 8** for deployed maintenance management procedures.	X	X	X	
249	**4.10.1.** Verify the status and availability of tasked equipment/UTCs and support equipment from the published mission or tasking order.	X	X	X	
250	**4.10.2.** Assign predeployment inspection JCN(s) for tasked equipment/ UTC(s).	X	X	X	
251	**4.10.3.** Aggressively manage maintenance actions to ensure tasked equipment/UTCs are ready for deployment.	X	X	X	
252	**4.10.4.** Print out PMI listings for the duration of the scheduled deployment and distribute them to the deploying UTCs.	X	X	X	
253	**4.10.5.** Control or maintain a status of the movement of equipment to and from the deployment assembly area.	X	X	X	
254	**4.10.6.** Display status of the deployment assembly area.	X	X	X	
255	**4.10.7.** Develop procedures for recording ESR, MDC, and PMI completion data for entry into IMDS from the deployed location. These procedures may require remote access to IMDS or sending documentation via electronic means for entry by home station personnel.	X	X	X	
256	**4.10.8.** Perform the following preparatory steps to ensure access to IMDS from the deployed location:	X	X	X	
257	**4.10.8.1.** Contact applicable MAJCOM(s) or IMDS database manager for assistance.	X	X	X	
258	**4.10.8.2.** Include IMDS requirements in communications planning documents.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
259	**4.10.8.3.** Provide points of contact list to deploying MOC personnel to resolve connectivity and accessibility issues.	X	X	X	
260	QUALITY ASSURANCE (QA)				
261	**5.1.** Introduction. Maintenance quality and equipment reliability is the responsibility of all personnel performing maintenance. Maintenance personnel are expected to install, configure, operate, inspect, maintain, repair, and remove C-E equipment in strict compliance with applicable technical data, safety directives and policy guidance. The combined efforts of QA personnel, maintenance leaders, and technicians are necessary to ensure high quality maintenance production and equipment reliability. Maintenance leaders are responsible for safety of equipment operation, training, and quality maintenance production. Exception: Due to the unique aspects of the EI mission, EI units are exempt from the QA requirements in this chapter. The parent MAJCOM will provide QA guidance to assigned EI units. NOTE: Refer to **Chapter 8** for deployed maintenance management procedures.	X	X		
262	**5.2.** Quality Assurance. Quality Assurance (QA) embodies a leadership philosophy that creates, throughout the maintenance activity, a working environment that inspires trust, teamwork, and a quest for continuous, measurable improvement. An inherent part of this philosophy is the requirement to assist work center, staff function supervisors, and the COM to identify and resolve maintenance and management problems. In order to foster this philosophy, QA must be more than just an inspection-oriented function. Evaluation and analysis of deficiencies and problems are key functions of QA. QA can significantly improve the quality of maintenance as well as the overall management posture within the maintenance activity by assisting staff and production supervisors to determine the root causes of problems and helping to devise corrective actions. QA is the maintenance activity's primary technical advisor. NOTE: Reference AFJQS 2EXXX-201G; and In-resident Training Course E3AZR2E066 003, Communications-Electronic (C-E) Maintenance Support Procedures, to accomplish task qualification training.	X	X		
263	**5.2.1.** The QA staff evaluates the quality of maintenance done in the maintenance organization and performs necessary functions to manage the organization's CSEP. Quality of maintenance and management, equipment condition, training plan effectiveness and personnel proficiency are validated through the CSEP.	X	X		
264	**5.3.** Quality Assurance Supervisor. The QA supervisor is responsible to the COM to ensure effective maintenance and management practices are used throughout the maintenance activity. The QA supervisor will:	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
265	**5.3.1.** Be thoroughly knowledgeable of QA responsibilities and procedures.	X	X		
266	**5.3.2.** Ensure accomplishment of QA responsibilities.	X	X		
267	**5.3.3.** Ensure QA personnel are trained on duties, responsibilities and procedures.	X	X		
268	**5.3.4.** Establish an appropriate tour length for personnel assigned to the QA function. Consider the unit mission and the need for personnel to remain technically proficient in their duty AFSC. Actual tour length may vary for each individual.	X	X		
269	**5.3.5.** Provide the COM and maintenance superintendent an initial orientation of QA responsibilities and procedures.	X	X		
270	**5.4.** QA Personnel. The COM fills QA positions with highly qualified and motivated personnel. Individuals selected to fill these positions are to be qualified and well suited for evaluation, analysis, and support duties. Do not assign personnel with a primary AFSC at the 3-skill level to QA.	X	X		
271	**5.4.1.** QA responsibilities go beyond performing evaluations. QA personnel must be able to provide assistance with technical and management guidance so staff functions and work centers can detect and correct problems in the early stages.	X	X		
272	**5.4.2.** Personnel assigned to QA or appointed as work center QARs will be trained by experienced QA personnel on management procedures, evaluation methods, and how to find probable causes for identified problems. Use AFJQS 2EXXX201G as a guide for training QARs.	X	X		
273	**5.5.** Work Center QAR. The COM may appoint one or more work center QAR(s) to accomplish duties as directed. QARs must demonstrate a thorough knowledge of their assigned QA duties.	X	X		
274	**5.5.1.** QARs will be trained according to paragraph **5.4.2.**	X	X		
275	**5.5.2.** QARs may assist QA during managerial evaluations. However, to maintain the objectivity of the managerial evaluation, QA will perform the majority of technical evaluations.	X	X		
276	**5.6.** QA Responsibilities. QA validates use of effective training programs, proven maintenance techniques, safety procedures, supply discipline, security procedures, and good housekeeping standards. QA should be involved in direct maintenance only to the extent needed to monitor maintenance and management quality. As a minimum, QA will:	X	X		
277	**5.6.1.** Provide help, advice, and authoritative references to work center supervisors and the COM staff.	X	X		
278	**5.6.2.** Establish and maintain a technical publications program.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
279	**5.6.3.** Manage the CSEP.	X	X		
280	**5.6.4.** Establish a deficiency analysis program and perform technical reviews.	X	X		
281	**5.6.5.** Process material and TO deficiencies.	X	X	X	
282	**5.6.6.** Serve as the focal point for the self-sufficiency program.	X	X		
283	**5.6.7.** Review work center facility, systems installation and equipment records management.	X	X		
284	**5.6.8.** Perform technical reviews of modification proposals and process valid proposals according to applicable directives.	X	X	X	
285	**5.6.9.** Serve as the focal point for the Corrosion Prevention and Control Program according to AFI 21-105.	X	X		
286	**5.6.10.** Serve as focal point for the subject of electrostatic discharge (ESD)control, and conduct work area ESD Control surveys according to TO 00-25-234.	X	X		
287	**5.6.11.** Perform hands-on maintenance, when directed by the COM.	X	X		
288	**5.6.12.** Train QARs according to paragraph **5.4.2.** and spot check QAR performance.	X	X		
289	**5.6.13.** Validate MOIs and assist in the development as needed.	X	X		
290	**5.6.14.** Maintain proficiency on UTC-related training tasks.	X	X		
291	**5.7.** Publication Requirements. Technical publications are essential for QA to function properly and to provide the maintenance activity with accurate information. Technical publications include TOs, commercial manuals, and specialized publications. Set up and maintain these publications according to AFPD 21-3, AFI 21-303 and TO 00-5 series publications.	X	X		
292	**5.8.** TO Distribution and Control.	X	X		
293	**5.8.1.** QA establishes a Technical Order Distribution Office (TODO) and ensures the adequacy and accuracy of TO files in the maintenance activity according to TO 00-5-1. QA establishes requirements for Computer Program Configuration Items according to TO 00-5-17. Give special attention to all electronically transmitted TCTOs and TOs due to the urgent nature of this type of change. NOTE: Reference AFI 21-303 and TO 00-5-1 for Lead TODO responsibilities.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
294	**5.8.2.** QA ensures current method and procedures TOs, TCTOs, evaluation work cards, work unit code manuals, and other TOs are available to the entire maintenance activity. The primary consideration is availability of TOs, with minimum duplication. QA is not required to keep duplicate copies of technical publications maintained by another work center/agency. If a TO is not maintained in QA, verification may have to be performed by QA in the work center. TOs should not be removed from the primary work locations simply to accommodate the staff.	X	X		
295	**5.8.3.** The COM may authorize FSMAs to set up a TODO.	X	X		
296	**5.9.** TCTO Processing. QA initiates TCTO processing actions according to **Attachment 13** and TO 00-5-15. QA reviews each incoming TCTO and advises the MOC of its applicability. Copies of each TCTO are distributed to the MOC, Materiel Control, and affected work centers as shown in **Figure A13.1.** and **A13.2.**	X	X		
297	**5.10.** Preplanned and Time Change Procedures. QA reviews all applicable -6 scheduled evaluation and maintenance requirements manuals and -6WC work cards to determine if preplanned and time change items are required. When requirements exist, QA provides the MOC the information needed to initiate suspense procedures.	X	X		
298	**5.11.** Local PMIs. Preventive Maintenance Inspection (PMI) requirements are normally shown in -6WC work card sets or -6 maintenance TOs. Some systems, especially minor electronic components, are bought "off-the-shelf" and do not have PMIs published in the TO system. In this event, follow the manufacturer's recommended maintenance schedules and the guidance provided in **Table A8.1.**, **Table A8.2.**, and **Table A8.3.**	X	X	X	
299	**5.11.1.** When PMIs are not published in the TO system, the COM determines if PMIs are needed. If needed, the COM decides whether to use available commercial manuals or to publish LWCs. Refer to TO 00-5-1 and TO 00-20-1. Consider specifications for mean-time-between-failure, operational requirements and other checks.	X	X	X	
300	**5.11.2.** LWCs cannot modify existing PMI routines.	X	X	X	
301	**5.11.3.** QA validates LWCs and assists in the development as needed.	X	X		
302	**5.11.4.** Use MAJCOM established LWC format. A prime consideration should be ease of use by work center technicians. TO 00-5-1 procedures for LWCs apply.	X	X	X	
303	**5.12.** Overview of CSEP.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
304	**5.12.1.** CSEP provides the COM with key indicators to judge the maintenance activity's ability to meet mission requirements. QA performs personnel, technical, managerial and special evaluations to determine the quality of maintenance management, production, and procedures; technician competence; and training program effectiveness. QA will publish specific guidance describing procedures for evaluations, suspense control, report preparation and routing, initial report reply and follow-up procedures.	X	X		
305	**5.12.2.** QA uses evaluation results to determine the effectiveness of maintenance and management practices. Management practices, systems and facilities must be evaluated periodically to identify and correct problems.	X	X		
306	**5.12.3.** Deficiencies found during systems evaluations may show a need for personnel evaluations. This can provide insight into a technician's training progression as well as the scope of work center training programs. Consider the training goals established for the technician as well as training already completed.	X	X		
307	**5.12.4.** QA performs evaluations during normal scheduled downtime if systems must be removed from operation. This requires close coordination between QA, MOC and work center supervisors.	X	X		
308	**5.12.5.** Evaluation schedules are jointly developed by QA, work center supervisors, and MOC to ensure minimum disruption. QA produces a list of scheduled and overdue evaluations for inclusion in the maintenance plan.	X	X		
309	**5.12.6.** QA maintains a hard copy or electronic copy (or a combination of both) of all CSEP evaluation reports.	X	X		
310	**5.13.** CSEP Exemptions. MAJCOMs may exempt unique functions from CSEP, for example, CRA work centers, power production, systems control, vehicle maintenance, etc. Exemptions will detail the specific requirement exempted (e.g., managerial, technical or personnel). The COM may provide functional assistance to exempted functions as required.	X	X		
311	**5.14.** Evaluation Guidance, Checksheets and Reports.	X	X		
312	**5.14.1.** If published, evaluation guides will be used during managerial evaluations for subjects such as safety, supply, vehicles, and administration. QA shall use AFMQCCs as evaluation guides for technical and managerial evaluations (see **Attachment 3**).	X	X		
313	**5.14.2.** MAJCOMs will publish MQCCs for MAJCOM-unique systems and to add additional checks to existing AFMQCCs (see **Attachment 3**).	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
314	**5.14.3.** Checksheets serve only as a guide. Additional subjects not covered in the AFMQCC may be assessed during the evaluation. Use the AF IMT 3900 when developing local technical and managerial evaluation guidelines.	X	X		
315	**5.14.4.** Send locally devised checksheets to the COM for final review and approval before use. Submit local MQCCs, with broad application, to your MAJCOM for potential Air Force publication.	X	X	X	
316	**5.14.5.** Review locally devised checksheets annually to ensure adequacy and currency.	X	X	X	
317	**5.15.** CSEP Evaluations.	X	X		
318	**5.15.1.** Personnel Evaluations.	X	X	X	
319	**5.15.1.1.** The personnel evaluation program assesses the effectiveness of a work center's training program, technician competence, and technical and procedural data adequacy. These areas are assessed to ensure equipment or systems are maintained in an effective and efficient manner to meet mission requirements.	X	X		
320	**5.15.1.2.** Technician performance is the measurement standard for training programs. Evaluation results may reflect deficiencies that can be rectified through additional training or training program improvements.	X	X		
321	**5.15.1.3.** Evaluations assess a technician's competence in two elements: Job Knowledge and Job Proficiency.	X	X		
322	**5.15.1.3.1.** The first element is knowledge - how much does the technician know about the job. This is determined by asking questions about the task during task performance. Additionally, technicians may complete written tests contained in AFQTPs and/or use interactive training devices or other sources.	X	X		
323	**5.15.1.3.2.** The second element is job proficiency - how well does the technician perform the job. The criteria for evaluating and analyzing this element is identified in the work center's training plan and the system or equipment technical data used to perform the job. Evaluators observe how well tasks are performed to determine if sufficient skill is demonstrated to verify competency.	X	X		
324	**5.15.1.4.** TO errors or deficiencies discovered during evaluations are reported according to TO 00-5-1. Deficiencies in AFCEMIs are reported according to **Attachment 4** of this instruction. The work center and QA correct deficiencies in LWCs.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
325	**5.15.2.** Personnel Subject to Evaluation. Military and DOD civilian personnel will follow the evaluation requirements in the following paragraphs. NOTE: AFETS, contractor, MEO, and SMT personnel are exempt from personnel evaluations.	X	X		
326	**5.15.2.1.** Evaluations for ATCALS Maintenance Tasks. Military and DOD civilian personnel who are task qualified and perform ATCALS maintenance tasks will undergo primary, follow-on, special, and ATCALS certification personnel evaluations.	X	X		
327	**5.15.2.2.** Evaluations for Non-ATCALS Maintenance Tasks.	X	X		
328	**5.15.2.2.1.** Military personnel who are task qualified and perform non-ATCALS maintenance tasks will undergo primary, follow-on, ICBM (if applicable) and special personnel evaluations.	X	X		
329	**5.15.2.2.2.** DOD civilian personnel who are task qualified and perform non-ATCALS maintenance tasks will undergo primary, ICBM (if applicable), and special personnel evaluations.	X	X		
330	**5.15.2.3.** DOD Civilian Personnel. When personnel evaluation results show more training is required, supervisors take action to increase the individual's proficiency. Evaluation results cannot be used to disqualify civilian personnel who are hired for specific jobs under civil service procedures. Disqualification of civilian personnel is according to applicable directives.	X	X		
331	**5.15.2.4.** In overseas units, the COM may exempt local national technicians from personnel evaluations (coordinate with local civilian personnel offices).	X	X		
332	**5.15.2.5.** Maintenance staff personnel may be evaluated under CSEP.	X	X		
333	**5.15.3.** Types of Personnel Evaluations. There are five types of personnel evaluations: primary, follow-on, special, ICBM communications and ATCALS certification evaluations. See **Figure 5.1.**	X	X		
334	**5.15.3.1.** Primary personnel evaluations provide early verification of the adequacy of an individual's training program and assist work centers in determining future training milestones to ensure technician competency. QA performs these evaluations on newly assigned personnel within 6 months of assignment to the work center (within 12 months for traditional AFRC and ANG members only). The COM may extend this time limit to compensate for training. File the approved extension in the individual's training records and document on the AF IMT 623a.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
335	**5.15.3.2.** Follow-on personnel evaluations are conducted by QA to verify the adequacy of the individual's continuation training program and to ensure technician proficiency is being maintained. Evaluate all personnel at least once every 24 months. Exceptions: evaluate ATCALS maintainers every 12 months according to paragraph **5.15.3.5.1.** and evaluate traditional AFRC and ANG technicians every 48 months.	X	X		
336	**5.15.3.3.** Special personnel evaluations are either mandatory (directed by a higher authority, such as this instruction or MAJCOM headquarters or optional (initiated by unit level work center supervisors). See **Figure 5.2.** The following are mandatory special personnel evaluations:	X	X		
337	**5.15.3.3.1.** When new types of systems are assigned to the work center, or when major modifications which significantly affect maintenance procedures, are accomplished. A sampling of technicians maintaining this system must be completed within 90 calendar days of systems acceptance or modification completion.	X	X		
338	**5.15.3.3.2.** When technicians are recertified following a CSEP evaluation decertification, an evaluation must be completed within 30 calendar days of recertification. Exception: an evaluation must be completed within 180 calendar days for traditional AFRC and ANG personnel.	X	X		
339	**5.15.3.3.3.** After an ATCALS or navigational aids facility flight evaluation is terminated resulting in an unsatisfactory rating due to technician error or lack of training.	X	X	X	
340	**5.15.3.3.4.** When technicians are reassigned back to a work center from a staff position and 6 months or more have elapsed since leaving the work center, an evaluation must be completed within 90 calendar days of reassignment.	X	X		
341	**5.15.3.3.5.** When technicians are reassigned back to an ATCALS work center from a staff position and 6 months or more have elapsed since leaving the work center, a special evaluation will be conducted before the commander appoints the individual as a task certifier or facility certifier. The complexity of the tasks selected and scope of the evaluation must meet the requirements of paragraph **5.15.3.5.1.**	X	X	X	
342	**5.15.3.3.6.** When technical evaluations or deficiency analysis trends indicate a lack of proficiency may be causing system problems or deterioration, an optional special personnel evaluation may be required to identify the cause. Evaluate a sufficient number of personnel to determine the overall effectiveness of the work center's maintenance capability.	X	X		
343	**5.15.3.4.** ICBM communications evaluations are conducted to ensure technician proficiency on command and control systems supporting nuclear missile weapon systems.	X	X	X	X

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
344	**5.15.3.4.1.** Evaluate each technician every 6 months. Avoid evaluating technicians on the same task in a 2-year period, if possible.	X	X	X	X
345	**5.15.3.4.2.** Evaluate technician proficiency using tasks selected from missile applicable Air Force Job Qualification Standards (AFJQS) or CFETP. Exception: Work centers supporting both missile and base communications missions may perform one base communications (non-missile) task evaluation per technician in a 2-year period.	X	X	X	X
346	**5.15.3.4.3.** Evaluate a team from each work center that performs LF penetration at least annually. This evaluation must include LF emergency operations. NOTE: Units maintaining more than one weapon system shall evaluate penetration of all weapon system LFs each year.	X	X	X	X
347	**5.15.3.5.** ATCALS Certification Evaluations are conducted to ensure technicians meet FAA proficiency requirements. Proper and timely evaluations allow Air Force technicians to certify that ground-based radar systems, navigational aids, and ATC radios meet technical parameters. These evaluations can occur during a primary or follow-on evaluation, but must include ATCALS task(s).	X	X	X	X
348	**5.15.3.5.1.** Evaluate all AFSC 2E0X1, 2E1X2 and 2E1X3 personnel who are task certified to maintain ATCALS at least once every 12 months. A majority of the tasks selected for the evaluation must be ATCALS related. ATCALS tasks selected for the personnel evaluation must also be of sufficient technical complexity to present a realistic measure of a technician's proficiency. Tasks involving simple meter readings alone will not satisfy this requirement. Personnel evaluations must measure the technician's capability to perform facility certification. The evaluation must also evaluate the technician's ability to determine when an ATCALS facility should be reported to the air traffic control supervisor for possible termination of service and under what conditions the ATCALS equipment/ facility can be returned to service. For technicians who maintain both ATCALS and non-ATCALS equipment, one evaluation will suffice if non-ATCALS equipment tasks are included and the above requirements are satisfied.	X	X	X	X
349	**5.15.3.5.2.** Evaluate non-ATCALS tasks at least every 24 months for these personnel.	X	X		X
350	**5.15.4.** Conducting Personnel Evaluations.	X	X		X
351	**5.15.4.1.** Personnel evaluations will be conducted by QA personnel.	X	X		X
352	**5.15.4.1.1.** The following exceptions apply:	X	X		X
353	**5.15.4.1.1.1.** The COM may direct QARs to assist QA in the performance of personnel evaluations when QA personnel do not possess the required skills or qualifications.	X	X		X

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
354	**5.15.4.1.1.2.** QA must directly supervise QARs on personnel evaluations with exception of personnel evaluations performed by QARs at FSMAs, as directed by the parent unit.	X	X		X
355	**5.15.4.1.1.3.** QARs assigned to AFRC and ANG Category III maintenance organizations can conduct personnel evaluations, as directed by the COM.	X	X	X	X
356	**5.15.4.2.** Evaluators are the key to the evaluation program and are not to be the same individual who certified task proficiency of the person being evaluated. Ideally, the evaluator is certified on the tasks being evaluated and possesses the same AFSC at a higher skill level than the individual being evaluated. (Exception: ICBM communications task evaluators must be qualified on the tasks evaluated during personnel evaluations and qualified on the system/equipment to perform technical evaluations.) When this is not practical, the evaluator must be capable of observing and verifying task accomplishment with a TO, manual or other reference. The evaluator must be capable of verifying proper procedures, tools, TMDE, and materials are used, and the task performance conforms to established standards.	X	X		X
357	**5.15.4.3.** Before conducting evaluations, evaluators must analyze and select tasks to be evaluated based on deficiency indicators, training management visits, NRTS validations, system performance data, previous evaluations done in the work center and other management indicators. If analysis does not indicate any areas requiring emphasis, evaluators should select tasks not previously evaluated in the work center. Consider all equipment when selecting tasks for personnel evaluations to adequately assess the work center training program effectiveness. Individuals may be evaluated on any task(s) they are qualified on, including troubleshooting techniques, alignments, and repair procedures.	X	X		X
358	**5.15.4.4.** Coordinate evaluations with the work center supervisor.	X	X		X
359	**5.15.4.5.** Select alternate tasks to avoid the need to reschedule an evaluation when operational requirements do not permit completion of planned evaluations.	X	X		X
360	**5.15.4.6.** Brief the technician on the tasks to be evaluated, the rating criteria, and the performance standards prior to beginning the evaluation. Evaluators should focus on the evaluation process, not the specific steps evaluatees must accomplish to pass. Emphasize that the goal is to determine the effectiveness of the work center's training program, not to pass the evaluation.	X	X		X
361	**5.15.4.7.** Evaluate three separate and distinct phases - preparation, task performance, and post performance (see **Attachment 14**.)	X	X		X

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
362	**5.15.4.8.** Stop the evaluation if technicians use methods or procedures that could jeopardize safety (including flight safety) or cause equipment damage. Task evaluations may be continued (at the evaluator's discretion) after the hazard is corrected.	X	X		X
363	**5.15.4.9.** During the evaluation, ask relevant questions on the methods and procedures used by the technician.	X	X		X
364	**5.15.4.10.** Evaluations are complete when the evaluator determines that the technician's performance has been sufficiently evaluated to determine work center training program adequacy and technician proficiency.	X	X		X
365	**5.15.4.11.** Brief the evaluatee and the work center supervisor at the conclusion of the evaluation.	X	X		X
366	**5.15.5.** Personnel Evaluation Results.	X	X		X
367	**5.15.5.1.** A technician's task performance is assessed as either satisfactory or unsatisfactory according to **Attachment 14**. Explanations and recommendations are required for each task rated as unsatisfactory.	X	X		X
368	**5.15.5.2.** Unsatisfactory task performance requires an investigation to determine the cause of failure. Route unsatisfactory personnel evaluation reports on all ATCALS certifying officials through the COM to the unit commander and complete decertification/recertification procedures. If the technician is an ATCALS equipment certifier, the commander must suspend the individual's certifier designation for the equipment the individual was decertified on. The commander may reinstate an individual's certifier designation following task recertification and successful completion of a reevaluation.	X	X		X
369	**5.15.5.3.** The work center supervisor, certifying official, and trainer must be briefed on noted problem areas as soon as practical following unsatisfactory task performance. Unsatisfactory task performance requires decertification and recertification on the particular task; it does not mean the individual is incapable of performing other tasks.	X	X		X
370	**5.15.5.4.** CSEP personnel evaluation results will not be recorded on, or made a part of, documents such as performance reports, unfavorable information files, etc.	X	X		X
371	**5.15.6.** Personnel Evaluation Reports.	X	X		X
372	**5.15.6.1.** Document personnel evaluations on AF IMT 2419 or equivalent automated product. Comments and recommendations are made on the evaluation report to eliminate the need for separate correspondence. The reports also provide a source for analyzing the effectiveness of the overall maintenance training program.	X	X		X

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
373	**5.15.6.2.** Identify task errors, provide recommendations, and explain rescheduling actions. Explain management, system, or equipment discrepancies not directly reflecting on the technician's performance in a separate report.	X	X		X
374	**5.15.6.3.** COM must review evaluation reports that document unsatisfactory task results.	X	X		X
375	**5.15.6.4.** Unit commander must review unsatisfactory ATCALS personnel evaluation to determine if certifier designation action is required.	X	X	X	X
376	**5.15.7.** Technical Evaluations. Technical evaluations give an overall view of the quality of maintenance. They also provide useful data for identifying training deficiencies and potential problem areas.	X	X		X
377	**5.15.7.1.** Technical evaluations will be performed in enough depth to ensure systems and equipment are maintained and managed according to applicable technical data. The following areas will be evaluated as a minimum:	X	X		X
378	**5.15.7.1.1.** System performance as indicated by the critical technical parameters. Also, NAVAIDS and ATC radar systems performance will be compared to flight check records and facility/equipment reference data.	X	X		X
379	**5.15.7.1.2.** Equipment cleanliness.	X	X		X
380	**5.15.7.1.3.** Compliance with standard maintenance practices and equipment safety requirements.	X	X		X
381	**5.15.7.1.4.** Corrosion prevention and control.	X	X		X
382	**5.15.7.1.5.** Equipment historical files, TO configuration, and completeness using AFTO Form 47X-series (when published), automated copies according to TO 00-35D-2, and/or master COTS inventories. Units will develop master inventories based on shipping, acceptance, catalog, and other applicable documents for COTS equipment (i.e., TDC, ICAP, etc.).	X	X		X
383	**5.15.7.1.6.** Applicable mobility markings.	X	X		X
384	**5.15.7.1.7.** Compliance with preplanned and time change requirements.	X	X		X
385	**5.15.7.1.8.** Management action taken on deferred maintenance actions.	X	X		X
386	**5.15.7.1.9.** Verification of the master PMI schedule to ensure all PMIs are scheduled.	X	X		X
387	**5.15.7.1.10.** Availability and condition of the technical data, tools, and required TMDE.	X	X		X
388	**5.15.7.1.11.** Verify UTC completeness using the pilot unit's LOGDET. Refer to AFI 10-403.	X	X		X
389	**5.15.7.1.12.** Timeliness and accuracy of ATCALS Certifications Records.	X	X		X

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
390	**5.15.7.2.** Use of appropriate AFMQCCs is mandatory for all technical evaluations. For equipment where AFMQCCs have not yet been published, local checksheets may be used.	X	X		X
391	**5.15.7.3.** Do not disassemble equipment solely for evaluation purposes. However, if disassembly is required to conduct the evaluation, make every effort to perform the evaluation in conjunction with a frequent interval PMI, maintenance action, or inspection.	X	X		X
392	**5.15.7.4.** Perform technical evaluations on a sample of all equipment and systems at least every 18 months using the sampling plan in **Attachment 15**. NOTE: COM may increase the frequency of technical evaluations based on mission requirements, suspected training problems, uptime rates, etc. The term "all equipment and systems" includes ICBM communications equipment and systems. AFRC and ANG communications flights/squadrons will complete technical evaluations at least every 18 months on equipment that will deploy with their wings/units upon mobilization. ANG/C4 will determine the evaluation intervals for equipment that supports in-garrison missions at ANG bases/unit.	X	X		X
393	**5.15.7.5.** Technical evaluations are most effective if performed shortly after scheduled maintenance is performed. Perform these evaluations in conjunction with a short interval PMI or other maintenance action to minimize operational mission disruption.	X	X		X
394	**5.15.8.** Technical Evaluation Reports.	X	X		X
395	**5.15.8.1.** Use of AF IMT 2420 to document technical evaluation discrepancies is a COM option. Technical evaluation discrepancies may be prepared in a narrative style on bond paper and attached to the AF IMT 2419 or automated cover letter.	X	X		X
396	**5.15.8.2.** Categorize discrepancies as major or minor. A major discrepancy is any deficiency that degrades mission, system, or equipment capability; creates an unsafe condition; or may cause a security violation. A minor discrepancy is any deficiency that does not degrade mission, system, or equipment capability; does not create an unsafe condition; and is not a potential security violation.	X	X		X
397	**5.15.8.3.** When technical evaluations show no discrepancies, document this fact on AF IMT 2419 or an equivalent automated product, and file as a completed report.	X	X		X
398	**5.15.8.4.** Document special technical evaluations the same way as technical evaluations. Do not document special technical evaluations that reveal no discrepancies on an AF IMT 2419 if an acceptance or commissioning document, such as an AFTO Form 217 or AF Form 1261, is signed.	X	X		X

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
399	**5.15.9.** Managerial Evaluations. QA managerial evaluations provide the unit commander, COM, and supervisors with factual, objective assessments of a section's ability to meet its mission requirements. To do this, it is necessary to collectively evaluate management effectiveness, equipment and systems condition, and the performance and technical proficiency of assigned personnel.	X	X		
400	**5.15.9.1.** Perform managerial evaluations on each staff function and work center at least every 18 months (every 36 months for AFRC and ANG units). As an option, managerial evaluations may be performed on specific functional areas (i.e., training, safety, etc.) across the maintenance activity instead of evaluating all programs within a specific function. Ensure applicable areas listed in paragraph **5.15.10.7.** are evaluated every 18 months (every 36 months for AFRC and ANG units).	X	X		
401	**5.15.9.2.** Perform a managerial evaluation when the results of an IG evaluation or higher headquarters staff visit indicate less than satisfactory performance or noncompliance by a work center, staff function, or functional area. Perform the evaluation within 4 months (8 months for AFRC and ANG units) of the IG or higher headquarters evaluation or visit.	X	X		
402	**5.15.10.** Conducting Managerial Evaluations.	X	X		
403	**5.15.10.1.** Before beginning managerial evaluations, review reports of previous managerial, technical, and personnel evaluations. Review other evaluation reports such as administrative files evaluations, IG evaluations, operational evaluations, and ATCALS analysis and flight checks. Also, staff assistance visit reports, maintenance analysis trend data, JDD and IMDS products, NRTS actions, and any other relevant management indicators.	X	X		
404	**5.15.10.2.** Make impartial, factual, pertinent, and complete observations to identify deficiencies. Identify commendable practices and programs, especially those that may be useful to other work centers.	X	X		
405	**5.15.10.3.** Demonstrate proper procedures and provide assistance to help work center and staff personnel meet mission requirements.	X	X		
406	**5.15.10.4.** Ensure affected supervisors fully understand findings before formal evaluation reports are written.	X	X		
407	**5.15.10.5.** Contact the work center's customers to determine if the work center is supporting their mission requirements.	X	X		
408	**5.15.10.6.** Evaluate subject areas in enough depth to ensure the results indicate the actual condition of the activity. Not all areas require 100 percent evaluation for the evaluator to make this determination. Use the sampling plan provided in **Attachment 15**.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
409	**5.15.10.7.** Determine how well work centers and support functions meet production and management requirements and if established procedures are followed. The minimum evaluation items include:	X	X		
410	**5.15.10.7.1.** Compliance with the intent of this instruction, associated and local directives, safety and security rules and procedures.	X	X		
411	**5.15.10.7.2.** Equipment and system condition and performance. Review recently performed technical evaluations. QA will determine the need to perform additional technical evaluations. Consider equipment recently repaired in order to assess the quality of repair actions such as alignments, component or printed circuit board replacement, and soldering. Check integrity and optimum operation of system monitors for ATCALS facilities.	X	X		
412	**5.15.10.7.3.** Compliance with the PMI schedule.	X	X		
413	**5.15.10.7.4.** Compliance with the HAZMAT and HAZCOM programs.	X	X		
414	**5.15.10.7.5.** Compliance with local, state, federal, and host nation environmental policy and guidance.	X	X		
415	**5.15.10.7.6.** Backup power run up procedures.	X	X		
416	**5.15.10.7.7.** Cannibalization procedures and documentation.	X	X		
417	**5.15.10.7.8.** Corrosion prevention and control program.	X	X		
418	**5.15.10.7.9.** Compliance with Electrostatic Discharge practices, where applicable according to TO 00-25-234.	X	X		
419	**5.15.10.7.10.** Check adequacy of training plans and training materials. Check training documentation, progression, and task coverage. Ensure required UTC training in support of AEF requirements is identified and incorporated into the training plan. Review recently performed personnel evaluations; QA will determine the need to perform additional personnel evaluations. NOTE: It is important at short tour locations that sufficient personnel evaluations are performed to ensure the adequacy of training programs.	X	X		
420	**5.15.10.7.11.** Compliance with job documentation and data accuracy.	X	X		
421	**5.15.10.7.12.** TMDE management to include: availability of required TMDE, limited and special calibration requirements, condition and calibration status, storage and handling, etc.	X	X		
422	**5.15.10.7.13.** Availability, management and condition of tools.	X	X		
423	**5.15.10.7.14.** Supply management to include: supply discipline, bench stock, supply point, and adjusted stock level management, reparable processing, CA/CRL, ITAMS, MSK and RSPs management.	X	X		
424	**5.15.10.7.15.** Use and condition of government vehicles.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
425	**5.15.10.7.16.** Technical data to include maintenance of TO files, availability, and use of required technical and commercial data.	X	X		
426	**5.15.10.7.17.** Standard and specialized publications to include: the adequacy and availability of required publications, publications familiarization and use of files, and the clarity and accuracy of the local directives for which the work center or function is OPR or OCR.	X	X		
427	**5.15.10.7.18.** Work Center facility, systems installation and equipment records.	X	X		
428	**5.15.10.7.19.** Adequacy and accuracy of system or equipment historical files.	X	X		
429	**5.15.10.7.20.** General housekeeping practices to include the condition of facilities and nonmission equipment.	X	X		
430	**5.15.10.7.21.** Actions to ensure adequacy of logistics support requirements for new systems.	X	X		
431	**5.15.10.7.22.** Adequacy of staff support to the work center or function being inspected.	X	X		
432	**5.15.10.7.23.** Compliance with NRTS procedures.	X	X		
433	**5.15.10.7.24.** Compliance with the Radio Frequency Radiation Safety Program according to AFOSHSTD 48-9.	X	X		
434	**5.15.11.** Evaluation Reports. Provide complete, accurate, and impartial reports with sound recommendations designed to help correct discrepancies and eliminate underlying causes. Include specific references so that work center or office personnel understand and know where to find procedures to correct deficiencies.	X	X		
435	**5.15.11.1.** Reference deficiencies that result from procedural omissions or repeated errors. Failure to perform checks to ensure publications are current or determine out of tolerance system or equipment measurements exist are examples of procedural deficiencies.	X	X		
436	**5.15.11.2.** References are not required when a deficiency or isolated minor error is easily understood and corrective action is obvious. General housekeeping practices, equipment cleanliness, and standard supervisory responsibilities and safety practices are examples of areas that may not require references. QA evaluators must take care not to assume all such practices and responsibilities are commonly recognized and understood.	X	X		
437	**5.15.11.3.** Deficiencies caused by inefficient or ineffective management practices may require the use of rationale since a specific reference may not be published. The COM resolves differences of opinion over the validity of the type of discrepancy before reports are finalized.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
438	**5.15.11.4.** Identify all MQCCs used during all evaluations. Indicate interval and date of most recent PMI on technical evaluations.	X	X		
439	**5.15.11.5.** Include recommendations for corrective actions with each deficiency, except where the corrective action is obvious. The goal is to provide ideas and guidance to assist the work center in correcting the deficiency.	X	X		
440	**5.15.11.6.** Document favorable comments, as well as deficiencies on CSEP evaluation reports.	X	X		
441	**5.15.11.7.** Note that proper report routing and follow-up actions are important. Evaluations are of no value unless the discrepancies are recognized and corrected by appropriate managers.	X	X		
442	**5.15.11.8.** The COM is the closing authority for CSEP evaluations. The COM may indicate closure by concurrence or nonconcurrence with QA's recommendations. The COM may delegate closing authority for evaluation reports that identify only minor or no deficiencies or technical evaluation errors.	X	X		
443	**5.15.11.9.** Note that evaluation reports need not include minor administrative or management deficiencies if, in the evaluator's judgment, the deficiency is an isolated incident and does not indicate an overall management deficiency. If not included in the formal report, provide information about minor errors in a memo to the work center. Memorandums do not require an answer.	X	X		
444	**5.15.11.10.** Use of AF IMT 2420 to document managerial evaluations is a COM option. Managerial evaluations results may be prepared in a narrative style on bond paper and attached to the AF IMT 2419 or equivalent automated product.	X	X		
445	**5.15.11.11.** Managerial evaluations reports address minimum coverage areas and list deficiencies found in the areas of management, system equipment, and task performance. Reports show correlation between deficiencies, if applicable. Additionally, the reports address production and mission requirements not being met and the causes behind these shortfalls.	X	X		
446	**5.15.11.12.** Document special evaluations of management problems or those covering the management and technical aspects of a subject the same way as managerial evaluations.	X	X		
447	**5.15.12.** Special Evaluations.	X	X		
448	**5.15.12.1.** Special evaluations are either mandatory (directed by a higher authority such as a MAJCOM headquarters) or optional (initiated by unit level management) and cover managerial or technical subjects.	X	X		
449	**5.15.12.2.** Mandatory Special Evaluations are required to:	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
450	**5.15.12.2.1.** Identify problem areas and suggest corrective actions to restore systems or equipment to technical specifications after unsatisfactory ATCALS system performance. Evaluate technical and managerial areas to prevent a recurrence of unsatisfactory ATCALS system performance.	X	X	X	X
451	**5.15.12.2.2.** Determine the TO completeness, serviceability, and modification status of system end items and major assemblies when items are transferred to or from the maintenance activity. For COTS equipment (i.e., TDC, ICAP, etc.), units will develop master inventories based on shipping, acceptance, catalog and other applicable documents.	X	X	X	X
452	**5.15.12.2.3.** Determine if equipment or systems installed, overhauled, modified, modernized, or relocated meet technical and installation requirements (including C-E self-help projects). When several like items are being modified, perform a special evaluation on the first few completed items to minimize corrections to all items. Ensure facility records and technical data are current and adequate.	X	X	X	X
453	**5.15.12.2.4.** Determine if on-site MDM is adequate. Provide results to the COM or designated representative prior to the certification of work on AFTO Form 217 according to TO 00-25-108.	X	X	X	X
454	**5.15.12.3.** Optional Special Evaluations are performed to:	X	X		
455	**5.15.12.3.1.** Investigate known or suspected management problems and provide recommendations for corrective actions.	X	X		
456	**5.15.12.3.2.** Survey equipment or systems to verify failure trends or marginal performance.	X	X		
457	**5.15.12.3.3.** Ensure TMDE initial issues meet TO configuration and physical serviceability requirements.	X	X		
458	**5.15.12.3.4.** Evaluate the quality of operator maintenance on power generating equipment, and assess the ability of authorized work center personnel to quickly place the power generators into safe and sustained operation.	X	X		
459	**5.15.12.3.5.** Determine if adequate corrective action was taken to correct major deficiencies identified during technical evaluations.	X	X		
460	**5.15.12.4.** Examples of when to perform a Special Evaluation.	X	X		
461	**5.15.12.4.1.** When further job progress makes evaluations impractical or impossible.	X	X		
462	**5.15.12.4.2.** When EI QA inspectors are on site, perform in-process and final acceptance evaluations in conjunction with EI QA evaluations.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
463	**5.16.** RM Support and Concept. Field unit RM support comes primarily from the feedback mechanisms of proposed equipment modifications, material deficiency reports, and TO improvement recommendations. Unit-level organizations contribute to the RM concept by maximizing self-sufficiency and analyzing work center management and the performance of technicians and systems.	X	X		
464	**5.17.** Deficiency Analysis.	X	X		
465	**5.17.1.** Deficiency analysis provides managers, at all levels, with an analysis of the maintenance techniques used to ensure operational reliability of C-E equipment, the health and effectiveness of training programs, and the effectiveness of work center or staff function management practices. Deficiency analysis is the process of determining the real, underlying cause of deficiencies.	X	X		
466	**5.17.2.** During evaluation report preparation QA personnel review noted errors and deficiencies, grouping like deficiencies into single categories, when appropriate. One or two minor errors that were corrected immediately may not seem significant by themselves; however, several instances of the same type of error could constitute a significant deficiency capable of impairing the unit or wing mission. QA personnel must be alert for patterns of recurring errors, in a single work center or throughout the maintenance complex. Patterns could indicate serious problems.	X	X		
467	**5.17.3.** QA identifies to the appropriate staff function patterns of errors and deficiencies found during all forms of evaluations. These deficiencies may indicate that additional guidance and training are needed in a specific area or function.	X	X		
468	**5.17.4.** Prior to completing and documenting evaluation results, QA personnel must, in conjunction with the affected work center supervisor, attempt to identify the underlying problem and provide a recommended corrective action. Deficiencies are often only symptoms of an underlying problem. Management actions, which result in ineffective supervision, inadequate training programs, insufficient manning, lack of proper tools, test equipment, parts or supplies, or a combination of these, and other factors, may be at the root of the identified problem.	X	X		
469	**5.17.5.** Reviewing work center responses to evaluations determines if the corrective action taken was capable of correcting the underlying problem. QA personnel must realize that there may be multiple methods capable of correcting the noted deficiency. The goal is to permanently correct the deficiency and not to pursue a particular method of corrective action.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
470	**5.17.6.** QA personnel must be intimately involved in investigating the deficiency or error trend and in the formulation of management actions targeted at resolving these deficiencies or error trends.	X	X		
471	**5.17.7.** QA will provide the commander, COM and the maintenance organization a deficiency analysis summary quarterly. See **Attachment 10** for a sample deficiency analysis summary. Organizational samples are located on the HQ AFCA C-E Maintenance Arena website at **https:// private.afca.af.mil/c-e_maint**. To develop the summary, QA will:	X	X		
472	**5.17.7.1.** Identify trends and deficiency patterns by reviewing CSEP evaluation results and soliciting feedback from other staff functions.	X	X		
473	**5.17.7.2.** Investigate and verify error trends and deficiency patterns by using applicable source data. The source data can include, but is not limited to, NRTS actions, AFTO IMTs 22, IG evaluation reports, higher headquarters staff visit, customer feedback, training reports, deficiency reports, maintenance data, and equipment up-time rates.	X	X		
474	**5.17.7.3.** Identify the underlying cause of the deficiency.	X	X		
475	**5.17.7.4.** Identify the impact of the deficiency.	X	X		
476	**5.17.7.5.** Identify the corrective actions already taken to resolve the deficiency.	X	X		
477	**5.17.7.6.** Recommend management action(s) to permanently correct the deficiency.	X	X		
478	**5.17.7.7.** Base the analysis on errors trends and deficiencies collected during the summary period. Compare the results to the deficiency analysis from previous summary reports.	X	X		
479	**5.18.** Reporting Materiel and TO Deficiencies.	X	X	X	
480	**5.18.1.** Locally identified problems in materiel and technical publications are normally solved outside the maintenance activity. For non-AFMC SM supported, MAJCOM acquired and/or developed systems and equipment, and unit acquired systems and equipment, refer to procedures specified in the contract or warranty.	X	X	X	
481	**5.18.2.** Review, process and monitor deficiency reports according to TO 00-35D-54. Refer to AFMAN 23-110 for additional guidance on submitting Standard Form 364. Use an automated means to record and monitor deficiency reports.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
482	**5.18.3.** Review, approve, process and monitor AFTO IMTs 22, according to TO 00-5-1. Signing the AFTO IMT 22 indicates approval, and verifies the report accurately reflects the deficiency, the need for change, and the desired correction. Use an automated means to record and monitor AFTO IMTs 22.	X	X	X	
483	**5.18.4.** Initiate and follow up on all correspondence related to the development of new publications, conflicts between publications, or clarification of technical data not subject to AFTO IMT 22 reporting. Send this correspondence through command channels.	X	X	X	
484	**5.19.** Unit Self-Sufficiency Program.	X	X		
485	**5.19.1.** The goal of the Unit Self-Sufficiency Program is to maximize readiness during peacetime and sustainability during wartime in support of the MAJCOM, wing, and base mission. Program objectives are to improve mission capability by repairing equipment at the lowest practical level of maintenance, reduce system downtime caused by delays in obtaining repair parts or replacement assets, and minimize transportation and handling costs. To meet these objectives, maintenance technicians, support staff, and managers work together to identify and obtain repair authorization for every system component or part not currently authorized repair but for which a feasible and economical unit repair capability exists. They then must strive to restore to serviceable condition every item for which a base repair capability exists. Carefully consider the intent of the Unit Self-Sufficiency Program when challenging established maintenance concepts. See **Figure 5.3.**	X	X		
486	**5.19.2.** QA manages the Unit Self-Sufficiency Program according to TO 00-20-3, TO 00-25-195; this instruction, and command and base directives.	X	X		
487	**5.19.3.** The program includes the NRTS review process and repair code change request submissions.	X	X		
488	**5.19.4.** QA applies prudent management during the NRTS review process and review of repair code change requests. The goal is to improve self-sufficiency through maximum use of available resources, not to develop a new, and perhaps costly, repair capability. Do not delay returning repair cycle assets to depot as NRTS while taking extraordinary measures to obtain parts or support items needed for repair. Once a determination has been made that a repair capability is not readily available on base, process the repair cycle assets (other than XF coded items) for higher-level repair. This permits the assets to be made serviceable and available for issue.	X	X		
489	**5.20.** NRTS Validation and Review Process.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
490	**5.20.1.** The NRTS validation and review process is designed to evaluate the NRTS program across the entire maintenance complex. NRTS validation ensures assets are repaired on base when it is economically feasible and within existing capabilities. The main purpose is to identify negative trends and employ managerial actions (i.e., acquiring test equipment, correcting technical data, obtaining additional training, etc.) to eliminate or reduce future NRTS actions. QA will:	X	X		
491	**5.20.1.1.** Validate all NRTS actions. Record validation of the NRTS action on MDC documents and condition tags and forward the asset to Materiel Control for further processing.	X	X		
492	**5.20.1.2.** Assist the production work centers in the NRTS process, if necessary.	X	X		
493	**5.20.1.3.** Maintain an automated or manual NRTS Action Register documenting the following entries as a minimum. Obtain this data from production work centers to enable proper trend and deficiency analysis:	X	X		
494	**5.20.1.3.1.** End Item Data: Noun, ID Number, and SRD Code.	X	X		
495	**5.20.1.3.2.** NRTS Item Data: NSN, Part Number, Nomenclature, WUC, ERRC, SMR code, TO Number-figure-index, and Explanation of Discrepancy.	X	X		
496	**5.20.1.3.3.** NRTS Code Data: NRTS Code used and rationale, Action Taken to preclude future similar NRTS actions.	X	X		
497	**5.20.1.4.** Determine if effective work center managerial action was taken to preclude future similar incidents.	X	X		
498	**5.20.1.5.** Advise COM and all production work centers of identified trends, as well as potential benefits recognized during the analysis process.	X	X		
499	**5.21.** Repair Code Change Requests.	X	X		
500	**5.21.1.** Many items that could be repaired at the local level are currently being disposed of at base level (including XB items) or being returned to the depot for repair. Other reparable items have improper SMR codes, resulting in their disposal rather than repair. Self-sufficiency programs focus attention on the problem and include procedures for processing proposed SMR code changes.	X	X		
501	**5.21.2.** Submit SMR code change requests to correct SMR code errors or inconsistencies in TOs or to change the authorized level of repair or condemnation according to TO 00-25-195. SMR code change requests are submitted using the DREAMS located at **https://www.asc.wpafb.af.mil/ infocen/smr**. QA will maintain an automated means to record and monitor SMR change requests.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
502	**5.21.3.** Note that the self-sufficiency program is not intended to establish a base-level repair capability for items that can be more economically repaired at a depot. To ensure this does not happen, initiators, supervisors, and QA should consider the following when developing and evaluating an SMR code change request:	X	X		
503	**5.21.3.1.** Will local repair action get the job done faster, easier, more economically, or better than the present method?	X	X		
504	**5.21.3.2.** Can local repair be accomplished using existing shop space, support equipment (including prudent use of on-line equipment for troubleshooting), and current work center manpower authorizations? If not, will the required additional skills, man hours, and support assets be available on a regular basis to do the job without impacting unit mission capability? Does the item fail often enough and would any local repair savings outweigh the cost of additional support equipment, facilities, and manpower?	X	X		
505	**5.21.3.3.** Can work center technicians learn the job through OJT or using knowledge already received in technical schools? If not, can AFETS personnel or other training sources provide the instruction?	X	X		
506	**5.21.3.4.** Even though it makes sense for one unit to accomplish the work locally, is it practical to expect all units to do it themselves, or would it be better to obtain special repair authority from the system/item manager based on a locally unique capability? If the system or equipment is deployable, can the support equipment and tools needed to do the work be transported, used, and supported in the field without impairing either the deployed or in-garrison mission? Will adequate shop facilities be available to do the work, especially in a conflict area?	X	X		
507	**5.21.3.5.** Finally, does repairing the item locally enhance mission readiness during peacetime, improve support to the base mission, or sustain the mission longer during wartime?	X	X		
508	**5.22.** Logistics Support Program.	X	X		
509	**5.22.1.** The communications unit P&I function manages the base infrastructure, supportability of new systems, contract management, short- and long-term C-E planning, C-E contingency and war support, and is the repository for planning and contingency support information. The COM must know of mission changes, new programs, new support agreements, and any impacts on existing maintenance concepts and resources. QA makes full use of P&I to avoid duplicating P&I functions within the maintenance activity.	X	X		
510	**5.22.2.** QA works with P&I to:	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
511	**5.22.2.1.** Ensure all logistics support areas are considered before accepting new support responsibilities. Early planning is essential. As a minimum, ensure the following areas of support are secured prior to acceptance:	X	X		
512	**5.22.2.1.1.** Test and support equipment are on-hand, and calibration requirements satisfied.	X	X		
513	**5.22.2.1.2.** Special and common tools are available.	X	X		
514	**5.22.2.1.3.** Peculiar performance monitoring or fault isolation equipment is available.	X	X		
515	**5.22.2.1.4.** Special or unusual facility requirements are in place.	X	X		
516	**5.22.2.1.5.** Technical data, supply support, and training requirements are identified and satisfied.	X	X		
517	**5.22.2.2.** Ensure P&I is provided with the necessary functional or technical expertise and assistance to:	X	X		
518	**5.22.2.2.1.** Review contract PWS and/or SOW development.	X	X		
519	**5.22.2.2.2.** Evaluate key logistics support elements for new or modified systems and equipment (i.e., radio frequency approval, request for service [communications circuits], etc.).	X	X		
520	**5.22.2.2.3.** Develop technical solutions.	X	X		
521	**5.22.2.2.4.** Review and evaluate programming documents and EI proposals. (Refer to **Attachment 2** and AFMQCC 200-3.)	X	X		
522	**5.22.2.2.5.** Ensure successful completion of self-help projects. (Refer to **Attachment 2** and AFMQCC 200-3.)	X	X		
523	**5.22.2.3.** Review projects, plans and agreements to ensure C-E maintenance taskings are met.	X	X		
524	**5.22.3.** The P&I function supports the maintenance activity by:	X	X		
525	**5.22.3.1.** Addressing the key logistics support elements before accepting support responsibility for new or upgraded equipment or systems. The logistics support elements for system sustainment are listed in **Chapter 10**.	X	X		
526	**5.22.3.2.** Monitoring project and program status and submitting appropriate DOD, Air Force or MAJCOM reports.	X	X		
527	**5.22.3.3.** Keeping the COM informed of logistics support milestones; changes to or new QA requirements resulting from agreements, plans, etc.; and functional and technical support requirements.	X	X		
528	**5.22.3.4.** Managing maintenance contracts and providing the maintenance activity with appropriate contract information.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
529	**5.23.** Maintenance Training Program. Training provides the maintenance activity with the skills needed to accomplish its mission. The purpose of the Maintenance Training Program is to monitor all maintenance training requirements and assist work centers to develop and implement effective training programs. QA must be aware of the maintenance activities training needs and all available training resources to satisfy these needs. QA must also know the maintenance activity's training status. QA will not duplicate unit training manager duties. NOTE: Reference AFJQS 2EXXX-201J to accomplish task qualification training.	X	X		
530	**5.23.1.** Maintenance Training Program Procedures. QA will:	X	X		
531	**5.23.1.1.** Evaluate the Maintenance Training Program on a continuing basis.	X	X		
532	**5.23.1.2.** Review personnel evaluations and other reports, such as managerial and technical evaluations, flight checks, system performance reports, IG evaluation reports, and ATCALS evaluations to determine if training deficiencies or problems are indicated.	X	X		
533	**5.23.1.3.** Visit each activity, work center, and staff office regularly. Ensure mandatory AFJQSs and AFQTPs are used, managed and administered according to applicable directives. Ensure all applicable AFQTP knowledge evaluation pamphlets and surveys are completed and submitted according to AFQTP instructions.	X	X		
534	**5.23.1.4.** Ensure AFJQS for AEF UTC training, AEF Just-In-Time training and other resources are available and accomplished prior to unit deployments.	X	X		
535	**5.23.1.5.** Review deficiencies that indicate possible training problems with the responsible supervisor and provide assistance as needed.	X	X		
536	**5.23.1.6.** Review IMDS training management products such as the COM Summary and TVL, or the equivalent manual documentation for possible deficiencies in task coverage or training progress.	X	X	X	
537	**5.23.1.7.** Assist work center supervisors to develop the work center MTP.	X	X		
538	**5.23.1.8.** Assist supervisors and trainers to meet specific training needs. Assist supervisors to develop and use effective, on-going training programs.	X	X		
539	**5.23.1.9.** Manage the maintenance activity's formal training requirements and quotas. Coordinate with the unit training manager to obtain training materials, course information, and guidance on training problems.	X	X		
540	**5.23.1.9.1.** Consolidate all maintenance training requirements. Submit requirements through appropriate unit channels. Control quotas received and take action to preclude recurrence of unused quotas.	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
541	**5.23.1.9.2.** Identify course shortages or personnel to fill course quotas and recommend appropriate actions to the COM.	X	X		
542	**5.23.1.10.** Act as the screening point for C-E training policy and the prioritization of training product development.	X	X		
543	**5.23.1.11.** Keep the COM informed of the maintenance activity's training posture.	X	X	X	
544	**5.23.1.11.1.** Provide the COM status of maintenance training programs monthly.	X	X		
545	**5.23.1.11.2.** Provide the COM with a maintenance training summary quarterly. Include negative training trends, the underlying cause(s), and recommendations to improve the deficient area.	X	X		
546	**5.23.1.12.** Ensure ETS personnel are used effectively to train work center personnel.	X	X		
547	**5.23.1.13.** Manage and control the IMDS personnel and training subsystems.	X	X	X	
548	**5.23.1.13.1.** Ensure all maintenance personnel information is entered into the personnel subsystem.	X	X	X	
549	**5.23.1.13.2.** Ensure newly assigned individual training records are initiated in the training subsystem and that work centers enter specific task assignments.	X	X	X	
550	**5.23.1.13.3.** Assist work center supervisors to validate the TTT listing for accuracy by comparing the training products located on the 81TRSS Q-Flight website: **https://wwwmil.keesler.af.mil/81trss/qflight/** and the Air Force CBT website located at the following website: **https:// www.smartforce.com/learning_community/Custom/USAF/login.asp**. Provide instructions and direction to update affected task tables, if required.	X	X	X	
551	**5.23.1.13.4.** Ensure maintenance training courses are documented as ancillary training in IMDS or as formal training on the AF Form 623.	X	X	X	
552	**5.23.1.13.5.** Request and distribute training schedules and background products as necessary.	X	X	X	
553	**5.23.1.13.6.** Before individuals depart PCS, ensure they possess a current copy of their CFETP, are removed from the personnel and training subsystems, and are given the appropriate training products (includes ancillary training) to carry to their next duty station. Gaining units desiring training data in any other form will coordinate with the losing unit prior to the individual's departure.	X	X	X	

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
554	**5.23.2.** Maintenance Management Training Program Procedures. This program ensures all maintenance personnel are aware, to the extent required by their position, of the many aspects of the maintenance management system described in Air Force and command directives. To administer this program, QA will:	X	X		
555	**5.23.2.1.** Review work center and staff office training programs to ensure appropriate maintenance management tasks are identified for training and the training is progressing.	X	X		
556	**5.23.2.2.** Arrange for staff subject matter specialists to brief or discuss changes in maintenance management policy and procedures. In most cases, these briefings can be accomplished during maintenance meetings; however, major changes in policies or procedures may require a broader more formal training approach.	X	X		
557	**5.23.2.3.** When possible, AETC, MTTs, FTDs and command managed courses should be used to provide more detailed training on various maintenance management subjects.	X	X		
558	**5.23.2.4.** Promote work center participation in evaluating AETC training programs. Review GASs for possible training support problems. Discuss deficiencies or support problems with the responsible supervisors and provide assistance if needed.	X	X		
559	**5.24.** AEF and Mobility Response Actions. In units with deployable UTCs, QA will include all UTC-assigned maintenance personnel and UTC-assigned maintenance work centers in the CSEP, regardless of AFSC, to include personnel, technical and managerial evaluations. This could include, but is not limited to, Power Production, AGE, and HVAC personnel. QA will take the following predeployment actions when the unit receives a mission tasking order: NOTE: Refer to **Chapter 8** for deployed maintenance management procedures.	X	X		
560	**5.24.1.** Conduct special evaluations on all equipment/UTCs prior to being turned-in to supply, transferred to another organization or after being received from another unit. One copy of the special evaluation report will be included in the documentation shipped with the equipment. A second copy will be maintained by QA for a minimum of 2 years or until all discrepancies are corrected and the report is closed.	X	X		
561	**5.24.2.** Turn-in or transfer inspections will determine the operational status of the system or end item and its completeness. QA and the affected flight's personnel will:	X	X		

ITEM	MAINTENANCE MANAGEMENT RESPONSIBILITIES	CATEGORY			
		I	II	III	IV
562	**5.24.2.1.** Perform system or equipment operational checks specified in all applicable AFMQCCs and perform an inventory (using AFTO Form 47X-series or automated copies where applicable) of all equipment and support items that are being turned-in or transferred.	X	X		
563	**5.24.2.2.** Document the turn-in or transfer inspection in IMDS as a special inspection. Print a snapshot to accompany the equipment before deleting the Equipment ID from IMDS. If IMDS is not available, this snapshot will be manually documented.	X	X		
564	**5.24.2.3.** Notify COM and Maintenance Superintendent, who will determine if discrepancies should be corrected before the turn-in or transfer action occurs.	X	X		
565	**5.24.3.** Conduct or participate in predeployment and postdeployment special evaluations. The COM determines the number and frequency of these evaluations.	X	X		
566	**5.24.4.** Air Mobility and Road Mobility Evaluations. QA will conduct air mobility cargo in-check and road mobility evaluations to ensure loads for airlift or road convoys are safe, configured and packed properly, and that the transportation documentation is correct.	X	X		
567	**5.24.5.** Fuel Handling Surveillance. When maintenance personnel have the responsibility for refueling vehicles and/or power production equipment, QA must observe fuel handling methods and procedures at least quarterly. Fuels must be dispensed in accordance with the prescribed safety standards and with the refueling or defueling procedures in applicable instructions.	X	X		

Table A12.2. (Added-ANG) Categories of Maintenance Organizations Requirements. A "Y" indicates additional requirements mandated by ANG.

ITEM	ATCS	222 CCS – 285 CCS
11	Y	Y
19	Y	Y
46	Y	Y
171		Y
172		Y
174		Y
175		Y
176		Y
184	Y	Y
185	Y	Y
186	Y	Y
187	Y	
188	Y	
189	Y	
190	Y	
191	Y	
192	Y	
194	Y	
215	Y	
216	Y	
217	Y	
218	Y	
219	Y	
220	Y	
221	Y	
222	Y	
223	Y	
225	Y	
226	Y	
227	Y	
228	Y	

ITEM	ATCS	222 CCS – 285 CCS
229	Y	
230	Y	
231	Y	
232	Y	
233	Y	
234	Y	
235	Y	
236	Y	
247	Y	
261	Y	Y
262	Y	Y
263	Y	Y
264	Y	Y
270	Y	Y
271	Y	Y
272	Y	Y
273	Y	Y
274	Y	Y
275	Y	Y
276	Y	Y
277	Y	Y
279	Y	Y
282	Y	
285	Y	Y
286	Y	Y
287	Y	Y
288		Y
289		Y
291	Y	Y
292	Y	Y
293	Y	Y
294	Y	Y
296	Y	Y

ITEM	ATCS	222 CCS – 285 CCS
297	Y	Y
301	Y	Y
303	Y	Y
304	Y	Y
305	Y	Y
306	Y	Y
307	Y	Y
308	Y	Y
309	Y	Y
311	Y	Y
312	Y	
313	Y	
314	Y	Y
317	Y	Y
320	Y	Y
321	Y	Y
322	Y	Y
323	Y	Y
324	Y	Y
325	Y	Y
326		Y
327	Y	Y
328		Y
329		Y
330	Y	Y
332	Y	Y
334		Y
335		Y
336		Y
337	Y	Y
338	Y	Y
340		Y
342	Y	Y

ITEM	ATCS	222 CCS – 285 CCS
356	Y	Y
357	Y	Y
358	Y	Y
359	Y	Y
360	Y	Y
361	Y	Y
362	Y	Y
363	Y	Y
364	Y	Y
365	Y	Y
366	Y	Y
367	Y	Y
368	Y	Y
369	Y	Y
370	Y	Y
371	Y	Y
372	Y	Y
373	Y	Y
374	Y	Y
376	Y	Y
377	Y	Y
378	Y	Y
379	Y	Y
380	Y	Y
381	Y	Y
382	Y	Y
383	Y	Y
384	Y	Y
385	Y	Y
386	Y	Y
387	Y	Y
388	Y	Y
389	Y	

ITEM	ATCS	222 CCS – 285 CCS
390	Y	Y
391	Y	Y
392		Y
393	Y	Y
394	Y	Y
395	Y	Y
396	Y	Y
397	Y	Y
398	Y	Y
399	Y	Y
400		Y
401	Y	Y
402	Y	Y
403	Y	Y
404	Y	Y
405	Y	Y
406	Y	Y
407	Y	Y
408	Y	Y
409	Y	Y
410	Y	Y
411		Y
412	Y	Y
413	Y	Y
414	Y	Y
415	Y	Y
416	Y	Y
417	Y	Y
418	Y	Y
419		Y
420	Y	Y
421	Y	Y
422	Y	Y

ITEM	ATCS	222 CCS – 285 CCS
423	Y	Y
424	Y	Y
425	Y	Y
426	Y	Y
427	Y	Y
428	Y	Y
429	Y	Y
430	Y	Y
431	Y	Y
432	Y	Y
433	Y	Y
434	Y	Y
435	Y	Y
436	Y	Y
437	Y	Y
438	Y	Y
439	Y	Y
440	Y	Y
441	Y	Y
442	Y	Y
443	Y	Y
444	Y	Y
445	Y	Y
446	Y	Y
447	Y	Y
448	Y	Y

Attachment 13

TIME COMPLIANCE TECHNICAL ORDER (TCTO) PROCESSING

A13.1. Introduction. Modification directives provide instructions to make system or equipment configuration changes that increase operational capability, correct deficiencies, or improve safety. Detailed guidance and codes for processing TCTOs are contained in AFCSM 21-556, Volume 2, and AFCSM 21-568, Volume 2, *Time Compliance Technical Order (TCTO) Software User Manual*. For systems that are managed by a program office with no SM support, refer to guidance for COTS manuals/modifications in TO 00-5-1. Organizations without IMDS must establish an alternate method to process TCTO data.

A13.2. Processing Procedures.

NOTE: The following procedures describe the sequence of actions taken to process TCTOs in IMDS (**Figure A13.1.** and **Figure A13.2.**):

A13.2.1. After receiving four copies of each TCTO from the TODO, QA gives the MOC all four copies, and advises if the TCTOs are applicable to assigned systems or equipment.

A13.2.2. Within 5 workdays, regardless of applicability, the MOC forwards two copies of the TCTO to the LRS, Asset Management Flight, Inspection Element.

A13.2.3. When a TCTO concerning items assigned or in stock does not apply to serial numbers, models, or versions on hand, enter the TCTO into IMDS as "not applicable." QA retains a copy of these TCTOs to check applicability against new equipment.

A13.2.4. When kits, parts, or tools are required, the MOC enters the TCTO into IMDS and:

A13.2.4.1. Fills out section I of AF IMT 2001, **Notification of TCTO Kit Requirements**. Sends three copies of AF IMT 2001 and one copy of the TCTO to Materiel Control. Base the quantity of kits required on the number of installed items to be modified plus the number of spares identified by the LRS.

A13.2.4.2. Retains one copy of the TCTO in a suspense file along with the current IMDS TCTO status printout.

A13.2.4.3. Creates a workorder in IMDS for each item in stock or assigned that requires TCTO accomplishment.

A13.2.4.4. Changes the TCTO status code and schedules a TCTO workorder to the applicable work center to complete the TCTO when notified by Materiel Control that kits, parts, and tools are available and verified as correct and complete.

A13.2.5. When kits, parts, or tools are not required, the MOC enters the TCTO into IMDS and creates a workorder for each item assigned to the unit or kept in the base supply stock that requires TCTO accomplishment. Schedule the workorder to accomplish the work.

A13.2.6. When the TCTO is a depot-level modification, the MOC enters the TCTO into IMDS.

A13.2.7. The MOC coordinates with system users and applicable work centers to schedule the completion of TCTOs.

A13.2.8. Work center supervisors ensure proper TCTO IMDS documentation is completed.

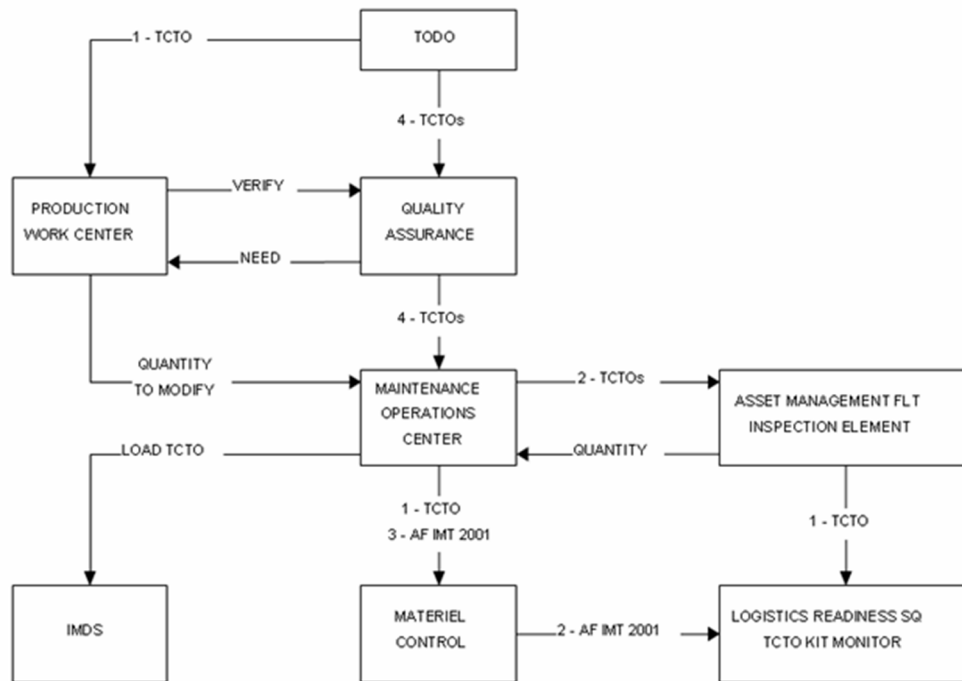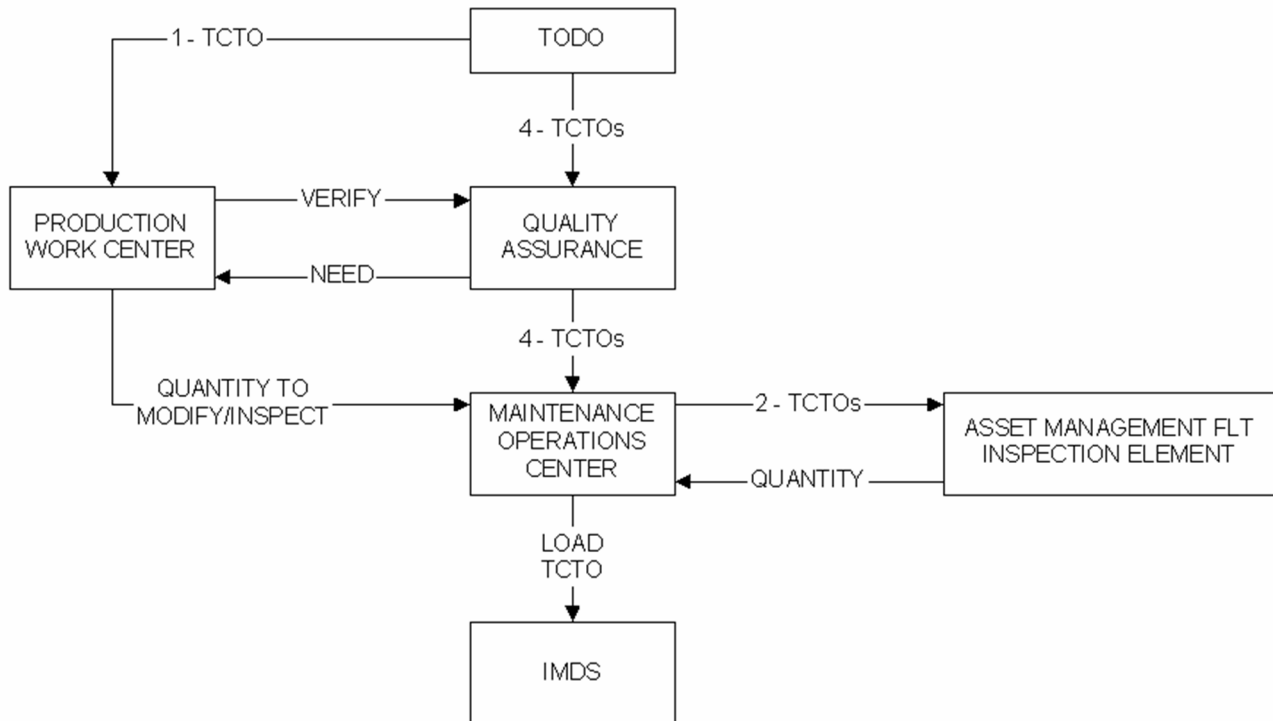**Figure A13.1. TCTO Routing - Kits Required.**

Figure A13.2. TCTO Routing - Kits Not Required.

Attachment 14

PERSONNEL EVALUATIONS

A14.1. Performing Evaluations.

A14.1.1. Personnel evaluations are performed to determine a technician's technical proficiency and competence and to gauge work center training program effectiveness. Evaluators must make careful observations of actions taken to accomplish each task being evaluated by judging three separate and distinct phases; preparation, task, and post performance.

A14.1.2. Errors made in any of these phases must be considered when determining results. The decision to declare a performance error must be based on published standard maintenance practices and TO procedures.

A14.2. Preparation Errors.

A14.2.1. Preparation errors normally indicate inadequate training on standard job preparation procedures or maintenance management requirements:

A14.2.2. Task preparation mistakes cause delays; mistakes corrected before the task begins are considered preparation errors and if not corrected, may have a bearing on task performance. For example, if a technician sets up an oscilloscope that is overdue calibration, document this mistake as a preparation error. However, if the technician uses that oscilloscope during task performance, document the mistake as a Category I or II task performance error, depending on how serious the impact might be on system or equipment capability by using "out of tolerance" TMDE. Some preparation error examples are:

A14.2.2.1. TMDE overdue calibration.

A14.2.2.2. Applicable technical data not on hand.

A14.2.2.3. Tools or support equipment not obtained before task initiation.

A14.2.2.4. Support equipment missing needed parts.

A14.2.2.5. Equipment was improperly handled.

A14.2.2.6. Equipment status not checked to determine the existing condition.

A14.2.3. Examples of management type preparation errors:

A14.2.3.1. The MOC not notified of changes in equipment status as a result of task performance.

A14.2.3.2. A JCN was not obtained for required documentation.

A14.2.3.3. There was no method available to document discrepancies discovered during the task performance.

A14.2.3.4. Safety briefing not conducted when required (refer to AFOSHSTD 91-50 and AFOSHSTD 91-501, *Air Force Consolidated Occupational Safety Standard,* Part 1.).

A14.3. Task Performance Errors.

A14.3.1. Task performance errors normally indicate inadequate task training.

A14.3.2. Examples of task performance errors are:

A14.3.2.1. Applicable technical data or directives not used.

A14.3.2.2. Warnings, cautions, and notes not complied with.

A14.3.2.3. Not all required steps performed.

A14.3.2.4. Steps not performed in the required sequence.

A14.3.2.5. Individuals not familiar with emergency procedures.

A14.3.2.6. Individuals not familiar with job requirements, resulting in failure to comply with technical data.

A14.3.2.7. Tools or equipment improperly used or handled during task performance.

A14.3.2.8. Tools or TMDE overdue inspection or calibration.

A14.3.2.9. Tools or equipment damaged by improper use or handling.

A14.3.2.10. Controlling agencies not advised of changes in mission status when status changes due to task performance.

A14.3.2.11. Lack of coordination with required agencies to ensure a safe, timely, and effective evaluation.

A14.4. Examples of Post Performance Errors:

A14.4.1. Maintenance documentation not properly completed.

A14.4.2. Parts required to fix/clear equipment discrepancies not identified.

A14.4.3. Work area clean up actions not accomplished.

A14.4.4. Tools and support equipment not properly stored after task completion.

A14.4.5. Reparable assets not properly identified for turn in or repair.

A14.5. Task Performance Error Categories.

A14.5.1. Categories aid evaluators to determine overall task performance results. Errors are categorized by degree of seriousness:

A14.5.2. Category I errors are of critical importance and results in an unsatisfactory evaluation for that particular task. Some examples are:

A14.5.2.1. An error that causes or has the potential to cause an injury. Such an error is serious enough to stop the task evaluation.

A14.5.2.2. An error that causes or has the potential to cause damage to any item to the extent that it prevents the item from being immediately used for its intended purpose. This includes the item being worked on, all support equipment, or any other item in the work area.

A14.5.2.3. Task performance could not be completed because the individual lacked sufficient knowledge of the task or operation of required support equipment.

A14.5.2.4. An error that causes or has the potential to cause a security violation or a violation of weapon system safety rules.

A14.5.2.5. An out of tolerance condition or measurement was not recognized and resulted in the equipment not meeting technical data specifications.

A14.5.2.6. A valid/invalid measurement or check was not recognized or performed by the technician which resulted in an erroneous decision concerning equipment serviceability or caused a significant delay for unnecessary troubleshooting or repair actions.

A14.5.3. Category II errors are of major importance, but do not necessarily result in an unsatisfactory task performance. Some examples are:

A14.5.3.1. An error that causes or has potential to cause damage to any item but not to the extent that such damage has a detrimental effect on the operational life of the item.

A14.5.3.2. A violation of a standard maintenance practice such as improper use of TMDE or hand tools, improper soldering techniques, or inadequate corrosion control.

A14.5.3.3. Excessive delays attributable to insufficient job knowledge or improper planning, coordination, or supervision, although the task was successfully completed. The evaluator must determine what is excessive after taking into consideration such factors as complexity and length of the task, adverse working conditions, and other extenuating circumstances.

A14.5.4. Category III errors are of minor impact and lack the seriousness to meet the criteria for a critical or major error.

A14.6. Determining Results.

A14.6.1. Results are based on overall task performance.

A14.6.2. Evaluators must:

A14.6.2.1. Document all errors during the progress of the evaluation and brief the work center supervisor and the evaluated technician upon completion.

A14.6.2.2. Determine the category of each performance error, using the above criteria (see **Table A14.1.**).

A14.6.2.3. Rate each task as satisfactory or unsatisfactory. If the sum of all the errors indicates the technician cannot satisfactorily perform the task unsupervised, an unsatisfactory rating is required.

A14.6.2.4. Brief the work center supervisor, certifying official, and the trainer as soon as possible when an unsatisfactory task performance occurs.

Table A14.1. Task Performance Evaluation.

RULE	If the individual Committed	AND	AND	Then the result is
1	No Category I Errors	Two or less Category II errors	The accumulation of Cat III errors did not detract from overall satisfactory job performance	SAT
2	No Category I Errors	Two or less Category II errors	The accumulation of Cat III errors caused Unsatisfactory performance	UNSAT
3	No Category I Errors	Three or more Category II errors	N/A	UNSAT
4	One or more Category I errors	N/A	N/A	UNSAT

NOTE: This table provides an objective method to evaluate errors. Nevertheless, the evaluator's judgment will often be the determining element. Evaluators must determine the effect the Category III errors have on task performance.

Attachment 15

SAMPLING PLAN

A15.1. Introduction. This sampling plan uses reduced evaluation procedures.

A15.2. Using a Sampling Plan.

A15.2.1. Population. The number of like equipment end items assigned to a work center will be used as the population for technical evaluations. Like equipment end items perform the same basic function, are of the same basic design, and are maintained using the same basic tests and alignments. For example, the AN/GRT-21 and AN/GRT-22 single channel Very High Frequency (VHF) and Ultra High Frequency (UHF) transmitters are considered like equipment end items. For personnel evaluations, population size will equal the number of assigned technicians.

A15.2.2. Some major end items, such as radar, are broken down into separate ID-numbered major assemblies or equipment groups to permit workload balancing according TO 00-20-1. In these cases, the number of separate ID-numbered major assemblies or equipment groups constitute the population to be inspected.

A15.2.3. The corresponding sample size is the minimum number of like equipment end items to be inspected.

Table A15.1. Sampling Plan.

Sample Sizes					
Population	**Sample Size**	**Population**	**Sample Size**	**Population**	**Sample Size**
1	1	51-90	8	501-1200	50
2-15	2	91-150	13	1201-3200	80
16-25	3	151-280	20	3201-10000	125
26-50	5	281-500	32		

A15.2.4. Random Sampling. Use a random number table to determine the specific serial numbered or ID-numbered items or assigned technicians to be inspected. **Exception**: QA will ensure the same person or serial-numbered end item is not inspected during consecutive inspection periods when at least two other end items are available for evaluation unless otherwise directed by the COM.

A15.3. Using the Sampling Plan for Other Evaluation Requirements.

A15.3.1. The sampling plan is also useful to inspect any large population commodity, such as TO files, publication files, and bench stock bins. Rather than inspect 100% of a file, evaluation of an appropriate sample normally provides a reliable indication of the condition of the total file.

A15.3.2. If significant discrepancies are found in the sample inspected, it may be desirable to inspect a second sample to verify the consistency of errors.

A15.3.3. When documenting the results of a sample size evaluation, indicate the sample size as well as the number of discrepancies found. This provides supervisors a proper perspective of the results.

Attachment 16

**AIR TRAFFIC CONTROL AND LANDING SYSTEMS (ATCALS)
CERTIFICATION FORMS**

A16.1. Purpose. This attachment identifies the ATCALS certification forms. The forms prescribed by this instruction and adopted AF Forms/IMTs and AFTO Forms/IMTs prescribed by specific equipment TOs will be used. Refer to **Table A16.1.** for ATCALS certification forms.

Table A16.1. ATCALS Certification Forms and IMTs.

FORM	TITLE
FAA Form 8240-22	**Facility Data Sheet**
AF IMT 3601	**AN/URN-5 Meter Readings**
AF IMT 3615	**Required Data for Performing PAR Alignment**
AF IMT 3900	**Quality Control Checksheet**
AFTO IMT 291	**Near Field Localizer Ground Check Record**
AFTO Form 292	**Composite Near Field Ground Check (LRA)**
AFTO Form 293	**FAR Field Localizer Ground Check Record**
AFTO Form 294	**Composite Far Field Ground Check (LRA)**
AFTO IMT 295	**Glideslope Reference Data**
AFTO IMT 296	**Localizer Reference Data**
AFTO IMT 297	**Localizer Preventive Maintenance Meter Readings**
AFTO IMT 298	**Glideslope PMI**
AFTO IMT 299	**AN/GRN-22 Reference/Preventive Maintenance Data**
AFTO IMT 300	**AN/FRN-44 VOR Reference Data**
AFTO Form 499	**ATCALS Certification Worksheet**
AFTO Form 500	**DBRITE Facility Reference Data**
AFTO IMT 501	**AN/FPN-62 PAR Facility Reference Data**
AFTO Form 502	**AN/GPN-12 Facility Reference Data**
AFTO IMT 503	**AN/GPN-20 Facility Reference Data**
AFTO Form 504	**AN/GPN-22 Facility Reference Data**
AFTO IMT 505	**AN/MPN-14K ASR Facility Reference Data**
AFTO Form 506	**AN/TPN-24 ASR Facility Reference Data**
AFTO Form 507	**AN/TPN-25 PAR Facility Reference Data**
AFTO Form 508	**AN/TPX-42 Facility Reference Data**
AFTO IMT 509	**ATC Radio Transmitter Certification Worksheet**

FORM	TITLE
AFTO IMT 510	**ATC Radio Receiver Certification Worksheet**
AFTO IMT 511	**ATC Antenna Coupler Certification Worksheet**
AFTO IMT 514	**ATC Transceiver Certification Worksheet**
AFTO Form 515	**AN/TRN-26 Facility Reference**
AFTO Form 516	**MMLS Flight Inspection Data**
AFTO Form 517	**MMLS Split Site Facility Data Log (AZ)**
AFTO IMT 518	**MMLS Collocated Site Facility Data Log**
AFTO Form 519	**MMLS Split Site Facility Data Log (EL)**
AFTO IMT 520	**PMR Reference Data Readings**
AFTO IMT 521	**AN/TRN-41 TACAN Facility Reference Data**

Attachment 17 (Added-ANG)

CATEGORIES OF MAINTENANCE

Table A17.1. (Added-ANG) Categories of Maintenance

CAT I	CAT II	CAT III	CAT IV
103 ACS	111 ASOC	All Base Communication Units	Savanna CRTC
107 ACS	140 ADS	127 OG	Gulfport CRTC
109 ACS	143 CCS	129 OG	116 ASOS
117 ACS	147 CCS	162 CCG	118 ASOS
123 ACS	149 CCS	200 CES	122 ASOS
128 ACS	169 ACWS	201 CCG	124 ASOS
133 TS	176 ACS	201 CES	148 ASOS
134 ACS	182 ASOG	202 CES	165 ASOS
137 SWS	221 CCS	203 CES	169 ASOS
141 ACS	228 CCS	222 CCS	238 ASOS
154 ACS	232 CCS	226 CCG	274 ASOS
255 ACS	236 CCS	235 ATCS	
266 RANS	239 CCS	241 ATCS	
283 CCS	241 CCS	243 ATCS	
	256 CCS	245 ATCS	
	261 CCS	248 ATCS	
	263 CCS	251 CCG	
	264 CCS	252 CCG	
	265 CCS	253 CCG	
	267 CCS	254 CCG	
	269 CCS	258 ATCS	
	271 CCS	259 ATCS	
	280 CCS	260 ATCS	
	282 CCS	270 ATCS	
	291 CCS	281 CCG	
	292 CCS	285 CCS	
	293 CCS	297 ATCS	
	299 RCS	Alpena CRTC	
	NEADS	Volk Field CRTC	
	SEADS		
	WADS		